

WILLOWBROOK CEMETERY ASSESSMENT, TOWN OF EDGEFIELD, EDGEFIELD COUNTY, SOUTH CAROLINA



Chicora Research Contribution 592

Cover illustrates one of the iconic fence gates threatened at Willowbrook.

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SOUTH CAROLINA**

Research Contribution 591

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“I don't embrace excuses. I embrace solutions.”
— Jon Taffer

MANAGEMENT SUMMARY

The Watson-Brown Foundation of Thomson, Georgia, funded this study. The field investigations were conducted on August 20, 2018. Report production followed immediately afterwards.

The study examines the Town of Edgefield's cemetery, founded about 1820 (although the precise date is uncertain). It includes 4 acres, all of which has been developed, and it served as the community's burial location for its white citizens into the early twentieth century, when Eastview was opened. It is a contributing site in the town's National Register Historic District.

A cemetery assessment is designed to help the cemetery caregivers to think about long-range preservation in a structured way, to understand better what is significant and why, and how it should be managed in order to preserve its historical significance and ensure the cemetery's preservation for future generations. Issues of access, roads, security, landscape maintenance, and monuments are examined. Current conditions are detailed and recommendations are offered.

I have no doubt that the Edgefield Cemetery Association is doing the best it can in caring for this valuable historic resource. Nevertheless, limited funds and a lack of meaningful support from local churches, the Town of Edgefield, and many local citizens have crippled the cemetery and resulted in poor maintenance. Even the minimal standards for the maintenance of a non-perpetual care cemetery are not being met.

The community seemingly prides itself on its history. One website claims the town is the "gateway to Southern history;" another touts the "10 governors" born in the county; and a third claims that the community "has a long, proud past and we are preparing for an even better future." Nevertheless, financial support for the

community's cemetery ("second most historic cemetery in South Carolina") is limited to little more than about \$500 a month.

There are no cemetery regulations; there has been vandalism in the past; mowing is inadequate; pruning is absent or where present, unprofessional; trees have been allowed to deteriorate; one tree recently fell, damaging multiple stones and is still on the ground; there are many toppled or significantly tilted stones; there are broken stones; there are displaced stones; leaves are not collected; and the list could go on.

The single greatest issue at Willowbrook is that there are inadequate funds to provide appropriate maintenance. The \$500 a month mowing barely keeps up with growth and does nothing for other issues at the cemetery. Without additional, significant, funding, it will become impossible to save the cemetery from significant deterioration.

All of the parties that were involved in the creation of the cemetery, specifically the Town of Edgefield, the various Edgefield churches, and those with family members buried on the property, must be held responsible for providing a budget of at least \$25,000 a year for the maintenance of this one cemetery.

The second issue, which should also be no surprise, is the need to improve not just mowing, but all facets of the landscape maintenance. This will include need to include attention to dead and dying trees, pruning, and inspections by ISA Certified Arborists. Maintenance of infrastructure is an equally critical issue, including control of erosion along Church Street.

Ignoring deterioration, whether it represents failing walls, corroding fences, or broken monuments, affects the entire cemetery,

making it a less attractive place for the community and degrading its National Register eligibility. Moreover, it ignores that the community (by which we mean the Town, the churches, and the citizens) is steward of the Cemetery, holding and

maintaining it for future generations. Simply put, after years of ignoring problems and deferring preservation activities, the community must take responsibility for the maintenance of the cemetery.

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Introduction

Willowbrook Cemetery, likely named for a small, intermittent creek flowing through its northern portion, is located in the Town of Edgefield, South Carolina. It served as the area's

first public cemetery for white citizens, formed between 1819 and 1823. Situated in central Edgefield County, the town is the county seat and is found in west central South Carolina along the

Savannah River. Located in the Southern Piedmont geological region, it is found on a northwest facing slope overlooking Willowbrook Creek, an intermittent tributary of Beaverdam Creek. The cemetery topography slopes slightly from the southeast to the northwest, with a lower section situated along the north edge of the creek. It is only steeply sloping in the approach to this lower section. We understand that this lower section was opened as the rest of the cemetery became filled. While no lots are available for sale today, there are still occasional burials by families claiming plots.

It is identified in tax records as TMS 137-06-02-001-000, which is about 6 acres, although it includes both the cemetery and the Edgefield First Baptist Church buildings. This church owns an additional two parcels to the south, including a parking area and a grassed lot (137-06-02-003-000 and 137-06-02-004-000).

There are reportedly at least 2,000 interments, and approximately 1,500 monuments. The Find A Grave™ website lists 1,047 monuments. At least one published transcription is available (Corley 1997).



Figure 1. Views of Willowbrook Cemetery. At the top is a view along the edge of Church Street (S-84), looking south. Below is the central area of the cemetery looking south, toward the Baptist Church.

INTRODUCTION

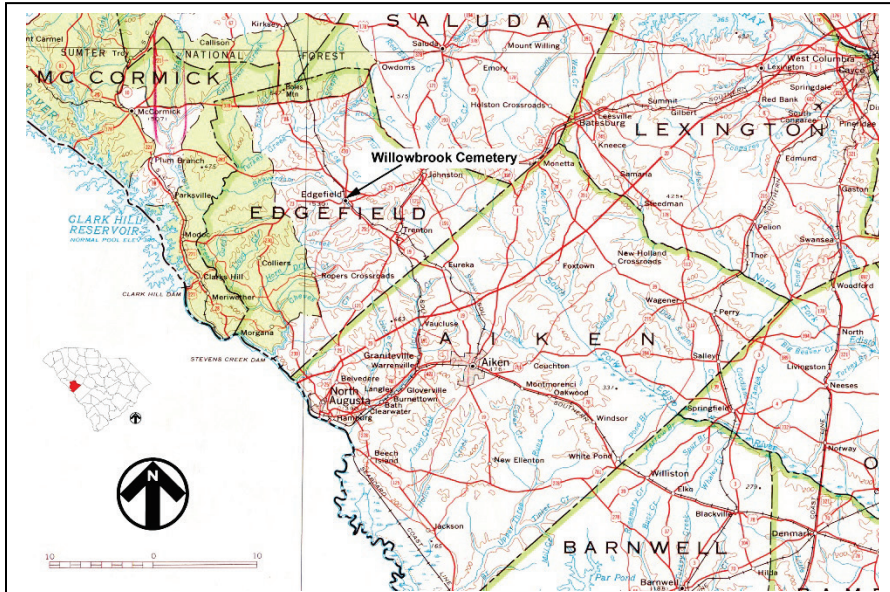


Figure 2. General location of Willowbrook Cemetery in Edgefield County, South Carolina.

In 1972, the Town of Edgefield Historic District was added to the National Register of Historic Places. It includes 10 specifically named standing structures and sites, including Willowbrook Cemetery, as well as an area of about 480 acres (Figure 4). The nomination provides virtually no detail,

Willowbrook Cemetery – Distinguished South Carolinians buried here include: Francis W. Pickens, John Gary Evans, Francis Hugh Wardlaw, Preston Brooks and Matthew C. Butler (Town of Edgefield

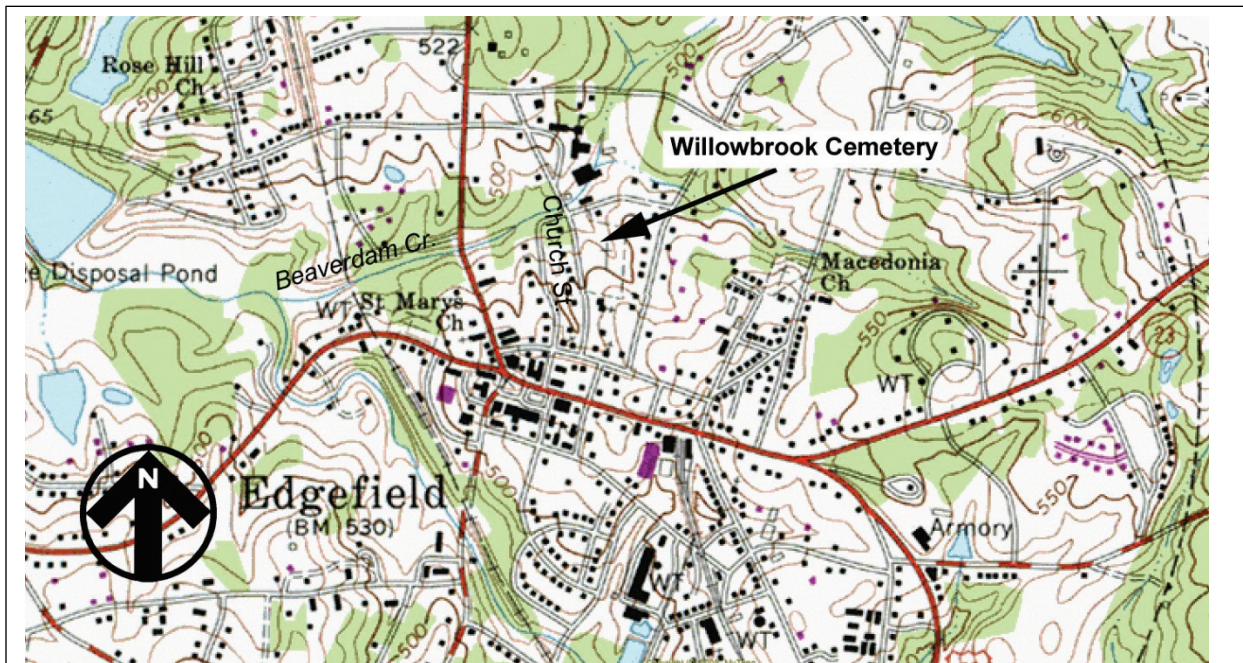


Figure 3. Portion of the Edgefield 1962PR84 USGS topographic map showing the vicinity of Willowbrook Cemetery.

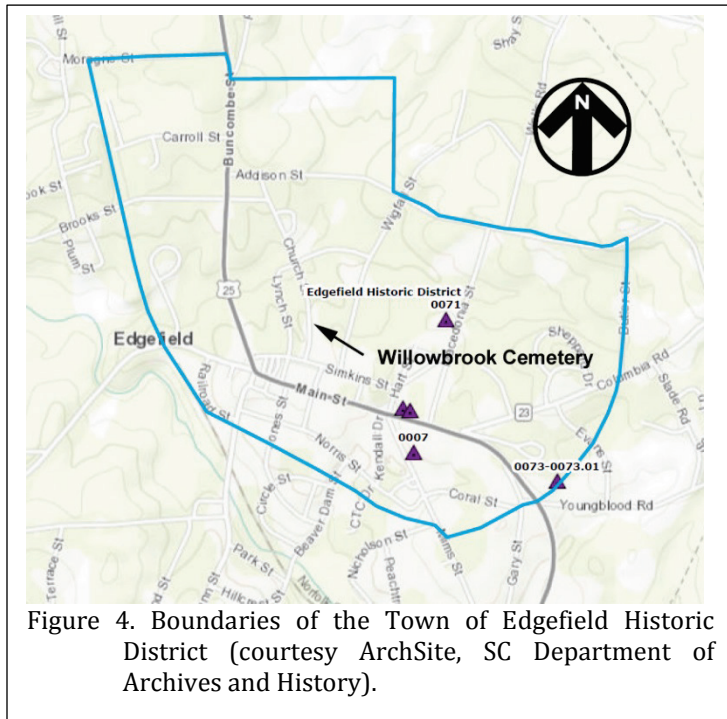


Figure 4. Boundaries of the Town of Edgefield Historic District (courtesy ArchSite, SC Department of Archives and History).

Historic District, pg. 2).

Typical of nominations from that time, the nomination fails to recognize any historic significance beyond “famous dead white men” and “old houses with white columns.” The reliance on mentioning five names – most of whom we dare say few South Carolinians in the twenty first century have heard of – fails to recognize the extraordinary range of three-dimensional monuments in the cemetery or the site’s association with nineteenth century mortuary practices. It fails to provide any convincing justification for the preservation of these sites. This may be at least partially the reason that today there are no zoning or other ordinances, that we can identify, which would provide any protection to any of the resources in this historic district, including the cemetery. Lacking such efforts to control development, much of the rural, historic character of the community has been lost with the gradual influx (and in some cases, demise) of modern businesses, new buildings, and new residential development.

Ignoring the trap of focusing on “old dead

white men,” the cemetery offers the opportunity to compare and contrast mortuary practices between whites and blacks since Macedonia Baptist Church is only 1,300 feet east of Willowbrook and even within the same historic district (although not mentioned). The unusual below ground vault at Willowbrook on the plot of James Adams Devore is a very unusual architectural feature (which could be made even more attractive with a little research and interpretation). Many of the family plots clearly document the mercantile wealth of Edgefield County – much of which was generated through the use of enslaved Africans, tying Willowbrook and Macedonia even more closely together (and this should encourage collaboration between the two entities).

The cemetery exhibits an exceptional range of ironwork, including examples from well-known manufacturers, such as Stewart Iron Works and Valley Forge. Both cast iron and mild steel examples are present. This can be tied not only to the wealth of the occupants, but also to the community’s presence on the rail line, allowing easy access to foundries and stonecutters. The date of the cemetery results in marble dominating the collection, providing examples of pedestal tombs, box tombs, table tombs, obelisks, and a variety of other designs, representing architectural styles such as Greek Revival, Gothic Revival, and High Victorian Gothic. Family plots provide evidence of the blending of both the churchyard or town/city cemetery and the early thoughts associated with the Rural Cemetery Movement. The cemetery exhibits elements characteristic of the picturesque Rural Cemetery movement, popular in the mid to late nineteenth century, such as the abundant use of iron fences and ornate monuments. The style, however, is tempered by the use of a rigid grid system typical of municipal cemeteries of the period. It is likely that, at one time, there were also ornamental plantings, but this aspect of the historic resource has suffered from decades of abuse.



Figure 5. Modern layout of the cemetery (Edgefield County GIS).

The Project

For the past several years, the Edgefield Cemetery Association and Friends of Willowbrook Cemetery have been grappling with the needs of the cemetery and how to further preservation efforts. In 2017, they reached out to Chicora and we began discussions regarding a preservation assessment. Although an agreement was quickly reached, Chicora's schedule precluded conducting the assessment until August 2018. This survey was conducted on Wednesday, August 22 and the report was prepared shortly thereafter at the Chicora offices in Columbia, South Carolina. The work included not only a careful inspection of the overall cemetery condition, but also an initial meeting with a representative of the Association.

This document may be viewed as a "comprehensive or master plan" in so far as it is a long-range plan that provides a policy framework to guide preservation planning decisions. We view long-range as ideally five years, believing that after that length of time progress should be evaluated and needs of the cemetery re-assessed. This document is not, however, a business, financial, or fundraising plan, although each of those topics influences preservation and will be at least briefly examined.

This preservation plan incorporates issues of not only maintenance of the landscape, but also security, pedestrian and vehicular access, vandalism, and maintenance of the cemetery's hardscape. The assessment also includes a review of critical conservation issues associated with monuments, plot fences, retaining walls, and coping.

The presence of a plan, however, does not guarantee improvement. This document is a "road-map" for preservation issues, but it is incumbent on the Association (and its partners, both present and future) not simply to implement its recommendations, but to embrace them. This may be difficult; change is difficult and many of the recommendations focus on fundamental operational changes.

Of even greater concern is that many of the most critical recommendations made in this study will require significant funding. This means there must be political resolve to do the "right thing" and ensure the preservation of this cemetery for future citizens of Edgefield County and South Carolina.

Failure to make substantive changes will have serious effects on the long-term quality of the landscape, the cemetery monuments, and the cemetery's community support.

Willowbrook Cemetery is fortunate in that the group requesting this study is active, energized, and seriously interested in the long-term preservation of the property. It is essential that cemeteries, such as Willowbrook, have a vocal constituency willing to write letters – and checks – for preservation.

Why Preserve?

Preservationists may take the question "why preserve" for granted; yet it remains an important issue, especially in the current economic and political climate. It is useful to provide at least some brief discussion of why preservation of Willowbrook Cemetery is a worthwhile – even critical – goal for the town and its citizens.

Cemeteries are different from all other types of historic sites. Most fundamentally, they contain the physical remains of past generations and are considered sacred, consecrated ground. The right to a decent burial has long been recognized in common law. So too, is the duty to continue a cemetery once begun. Thus a community, by opening a cemetery, creates a duty through its officials and citizens to execute the trust and maintain the cemetery for the benefit of the public.

Cemeteries are also artistic sites, such as a sculpture garden or outdoor museum, which contain a collection of three-dimensional artifacts. The monuments trace changes in both designs and social attitudes toward religious and moral views, death and eternity. They provide examples of the largely disappeared art of stone carving,

illustrating numerous famous artisans. They are permanent collections, but must be considered finite and irreplaceable.

These collections are archives, having the same value and importance to the community as any archives. They are storehouses of genealogical information that often cannot be identified through any other means. They provide information concerning both the individual and collective pasts.

Sometimes it is thought that once a genealogical assemblage of the cemetery is collated and published, archival concerns have been fulfilled. This is incorrect. Few such compilations include detailed photographs and full transcriptions, including verses.

In addition, part of this archive is the archaeological and bioanthropological information the cemetery contains – even if the burials are never excavated. The graves and tombs can provide information on mortuary behavior, such as the coffins and hardware chosen by relatives. The human remains can provide information on diet, disease, and burial practices – information that is available from no other source.

Cemeteries are also scenic landscapes, similar to parks or open spaces, except they are much more. They are far more fragile and susceptible to damage and deterioration. As such, they require distinctly different care.

Thus, cemeteries are important social, historic, architectural, and archaeological artifacts. When there is little else physically remaining of a community's earliest history, there will often be a cemetery that provides a unique tie to the community's collective past that would otherwise be lost.

Beyond these ties to the community's history and the ethical responsibility of caregivers, the preservation of our past also has clear economic benefits to a community. These serve to dispel the argument that while history may be important, there are more pressing needs. History

can, in fact, generate the economic stimulus to help address the other needs of a community.

Taking just a few examples from the numerous studies available:

- Historic preservation activities generate more than \$1.4 billion of economic activity in Texas each year.
- Rehabilitation of historic properties in Georgia during a five-year period created 7,550 jobs and \$201 million in earnings.
- Even more significantly, a 2011 study in neighboring Georgia found that historic preservation creates more jobs per \$1 million in economic activity than the same amount in other major industries.
- Recent studies in Savannah, Rome, Athens, and Tifton, Georgia found that properties in designated historic districts often appreciated in value more than similar properties in non-designated areas.
- Each dollar of Maryland's historic preservation tax credit leverages \$6.70 of economic activity within that State.
- In one year, direct and indirect expenditures by heritage tourists in Colorado reached \$3.1 billion.
- A New York state study found that prices of houses in historic districts are higher than those of similar houses outside historic districts.
- A detailed Massachusetts study found that heritage tourism travelers spend "considerably more" than other travelers and that most come from out of state, further accentuating the economic contribution of heritage tourism. The study found that heritage tourists contributed an estimated \$2.5 billion annually over the 1998 through 2000

period. Considering both direct and multiplier effects, Massachusetts received annually from heritage tourism 53,000 jobs; \$1.2 billion in income; \$1.8 billion in gross state product; \$559 million in taxes (including \$301 million in state-local taxes); and annual in-state wealth creation of about \$1.5 billion.

- In South Carolina, historic preservation creates 4,000 jobs annually. Heritage tourism results in \$325.6 million annually in direct spending in South Carolina with the direct creation of 9,097 jobs and another 2,300 jobs indirectly.

Thus, we see a broad range of reasons why we should be concerned about the preservation of Willowbrook Cemetery. We argue, in fact, that the significance of cemetery preservation is actually greater than the sum of its parts.

Preservation or Restoration?

Preservation is *not* restoration. Restoration means, very simply, making something “like new.” Restoration implies dramatic changes of the historic fabric, including the elimination of fabric that does not “fit” the current “restoration plan.” Restoration is inherently destructive of patina and what makes a property historic in the first place. The “restorer” of a property too often knows little of the Secretary of the Interior’s Standards for Preservation and may care even less.

One of the most important early writings was that of nineteenth century art critic and observer John Ruskin. In *The Seven Lamps of Architecture* published in 1849 and in particular, “The Lamp of Memory,” Ruskin introduces us to the issue of trusteeship where he explains,

it is again no question of expediency or feeling whether we shall preserve the buildings of past times or not. *We have no right whatever to touch them.* They are not ours. They belong partly to those who built them, and partly

to all the generations of mankind who are to follow us (Ruskin 1989:245)

Ruskin also crisply stated the difference between restoration and repair, noting that “restoration” means,

the most total destruction which a building can suffer: a destruction out of which no remnants can be gathered: a destruction accompanied with false description of the thing destroyed (Ruskin 1989:241).

In contrast, preservation (or conservation for that matter) can be defined as preventing or delaying loss, depletion, waste, or harm. Preservation seeks to limit natural deterioration.

Preservation will respect the historic fabric, examine the variety of options available, and select those that pose the least potential threat to the property. Preservation (as well as conservation) will ensure complete documentation, whether it is of cleaning, painting, or repair. Preservation treatments will ensure that the work done today does not affect our ability to treat the object tomorrow.

Preservation Fundamentals

Preservation is not an especially difficult concept to grasp, although the key principles are not always clearly articulated. The fundamental concepts are well presented in the Secretary of the Interior’s Standards for Preservation (see Table 1).

This document reminds us – at least at a general level – of what caregivers need to be thinking about as they begin a cemetery preservation plan. Those responsible for the care of Willowbrook Cemetery should be intimately familiar with the eight critical issues it outlines.

For example, all other factors being equal, a cemetery should be used as a cemetery. Until the caregivers are able to do what needs to be done, it

Table 1.
Secretary of the Interior's Standards for Preservation

1. A property will be used as it was historically, or be given a new use that maximizes the retention of distinctive materials, features, spaces, and spatial relationships. Where a treatment and use have not been identified, a property will be protected and, if necessary, stabilized until additional work may be undertaken.
2. The historic character of a property will be retained and preserved. The replacement of intact or repairable historic materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place, and use. Work needed to stabilize, consolidate, and conserve existing historic materials and features will be physically and visually compatible, identifiable upon close inspection, and properly documented for future research.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
6. The existing condition of historic features will be evaluated to determine the appropriate level of intervention needed. Where the severity of deterioration requires repair or limited replacement of a distinctive feature, the new material will match the old in composition, design, color, and texture.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

is their responsibility to make certain that the site is preserved – it must not be allowed to suffer damage under their watch.

Caregivers must work diligently to understand – and retain – the historic character of the cemetery. In other words, they must look at the cemetery with a new vision and ask themselves, “what gives this cemetery its unique, historical character?” Whatever it is, those undertaking its care and preservation become the guardians responsible for making certain those elements are

protected and enhanced (whether they are particularly appealing to the caregivers or not).

Whatever conservation efforts are necessary must be done to the highest professional standards; these conservation efforts must be physically and visually compatible with the original materials; these conservation efforts must not seek to mislead the public into thinking that repairs are original work; and the conservation efforts must be documented for future generations. If the caregivers are not conservators, it is their responsibility as the stewards of the property to retain a conservator appropriately trained and subscribing to the Code of Ethics and Standards of Practice of the American Institute for Conservation (AIC).

The Secretary of the Interior reminds those responsible for the resources that each and every cemetery has evolved and represents different styles and forms. Few, if any, cemeteries are “frozen in time.” For example, Willowbrook Cemetery, while originating in the antebellum period, contains examples of a variety of later memorials, including late nineteenth and early twentieth century granite die on base monuments. The landscaping provides transitions from a Victorian Rural Cemetery picturesque landscape to an early twentieth century lawn-park.

It is the responsibility of caregivers to care for all of these modifications and not seek to create a “Disney-land” version of the cemetery, tearing out features that do not fit into their concept of what the cemetery “ought” to look like.

Likewise, caregivers are reminded that there will be designs, monuments, and other features that characterize the cemetery – and the caregivers are responsible for identifying these items and ensuring their preservation. Caregivers must be circumspect in any modifications, ensuring that they are not destroying what they seek to protect (a problem with virtually all “restoration” efforts).

Before acting, those responsible for preservation are required as good and careful stewards to explore and evaluate the property, determining exactly what level of intervention – what level of conservation – what level of tree pruning – is actually necessary. In addition, where it is necessary to introduce new materials – perhaps a pathway – into the cemetery, they must do their best to make certain these new elements are not only absolutely necessary, but also match the old elements in composition, design, color, and texture.

In other words, if the cemetery has soil pathways, they would be failing as good stewards if they allowed concrete pathways – especially if the only justification was because concrete was less expensive or easier to maintain.

Where conservation treatments are necessary, the Secretary of the Interior tells stewards that they must be the gentlest possible. However phrased – less is more – think smart, not strong – caregivers have an obligation to make certain that no harm comes to the resource while under their care. And again, one of the easiest ways to comply is to make certain that caregivers retain a conservator subscribing to the ethics and standards of the American Institute for Conservation.

Finally, the caregivers must also recognize

that the cemetery is not just a collection of monuments and the associated landscape – the cemetery is also an archaeological resource. They must be constantly thinking about how their efforts – whether to repair a monument, put in a parking lot, or resurface a path – will affect the archaeological resources – archaeological resources that are the remains of people buried at the cemetery by their loved ones.

These are especially critical issues for the Willowbrook Cemetery. The cemetery has been fighting gradual – and at times exponential – deterioration since at least the late nineteenth century. Lacking a defined budget, the cemetery and its caregivers have been forced to struggle for every penny and this has dramatically impacted their ability to care appropriately for the property. Maintenance activities are minimal, including mowing, pruning, and tree care. There has been no formal or organized action to combat vandalism or develop meaningful rules and regulations to govern activities in the cemetery.

Attention to the Secretary of Interior Standards for Preservation is even more critical today since the 1972 listing of the cemetery on the National Register of Historic Places. There should be no option for “business as usual.” The town, churches, Association, and other friends of the cemetery must embrace these Standards and we recommend that a meeting of the cemetery’s caregivers be held during which the standards are fully explained to all members.

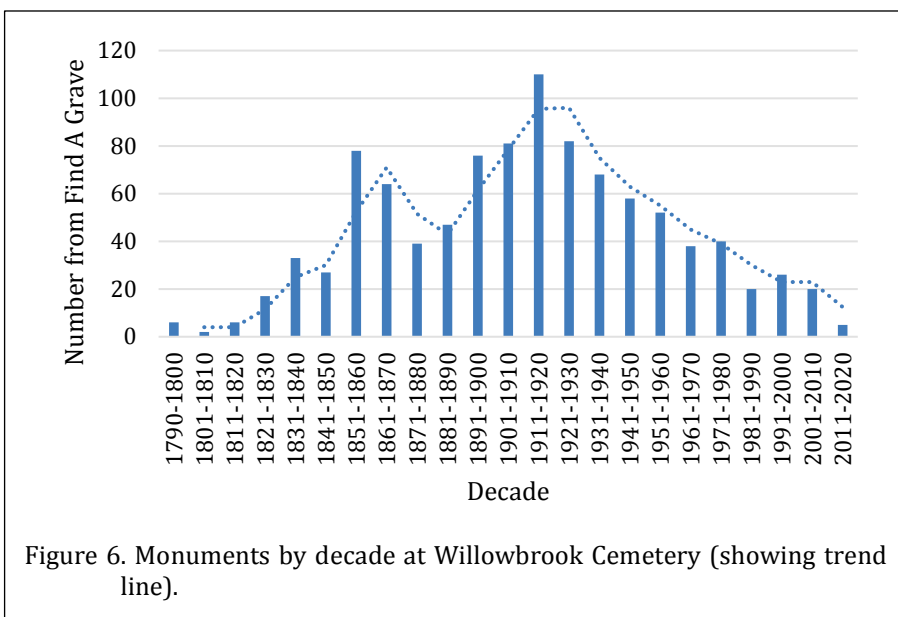
A Brief History

Historical research was not called for in the scope of this project, but our review of available documents clearly demonstrates the need for such research.

One of the most notable deficiencies is that it appears unknown when Willowbrook (or what was historically called Village Cemetery) was created or who deeded land to whom for its creation – although we do know that today, the property appears to be legally owned by the Edgefield First Baptist Church.

For example, one source suggests that the cemetery dates back to “as early as 1819” when Pierre LaBorde, Edgefield’s first merchant, was buried there (<http://www.historicedgefield.com/id7.html>). Curiously, the LaBorde monument indicates a death date of November 1820. This same source indicates that the Edgefield Village (First) Baptist Church was organized in 1823, after the founding of the cemetery, with the land being given by Edred Simkins “with a broad subscription from all over the county.”

Chapman, in his *History of Edgefield County from the Earliest Settlements to 1897*, fails to mention the cemetery or the Baptist Church.



If we use the data from Find A Grave™ to identify the number of graves by decade, several observations are possible. The first is that a number of graves have been attributed to this cemetery as early as 1790. While we suspect that these were added by individuals who know only that their ancestors died in Edgefield County, it is possible that the Village Cemetery began earlier than realized. Clearly, this issue requires additional attention.

In addition, we find two peaks in burials at the cemetery (or at least in marked graves). The

first is at the last decade of the Civil War. We wonder if this may be the result of the vast fortunes being generated by cotton allowing more people to mark graves in a permanent fashion. The second peak is 1911-1920 and this we feel certain is the result of the 1918 flu epidemic, which lasted from January 1918 through December 1920. Burials began declining after 1920 and this was likely the result of East View Cemetery being opened in 1919.

As is the case with so many rural cemeteries, the first time we can identify the cemetery in news accounts is an 1866 article entitled, “Desecration of our Village Cemetery.” The article reported, “shrubs, evergreens and flowers . .

. are being ruthlessly broken and injured” (*Edgefield Advertiser*, March 21, 1866, pg. 2). The article is important since it documents that plantings were present at the cemetery, even at this early date and also it brings the damage to the attention of Town Council, implying that the town was to some degree responsible for the cemetery.

The following year the paper announced a minstrel show for the benefit of the Baptist Church Sunday School and the cemetery, suggesting that

the Baptist Church was in some way associated with the property (*Edgefield Advertiser*, June 19, 1867, pg. 2).

As early as 1871, however, the local paper complained, “a little work in the village cemetery, in cleansing the walks and beds, is much needed” (*Edgefield Advertiser*, August 17, 1871, pg. 3). This was the first of what was to be a reoccurring complaint concerning the care being given to the Village Cemetery.

Nothing more, however, is heard until 1892, at which time W.D. Jennings, Sr. complained in this article that individuals cleaning the “larger village cemetery” were throwing debris on the graves and walks “of the smaller cemetery that adjoins it” (*Edgefield Advertiser*, May 26, 1892, pg. 3). Jennings was a former slave owner and a physician living in Edgefield. He died in 1897 and was buried in Willowbrook. What was the division between this “larger” and “smaller” cemetery? And what became of the “walks” to which Dr. Jennings made reference?

This distinction between the two cemeteries was again noted in 1893, when the same complaint was voiced by “Senex” (*Edgefield Advertiser*, November 30, 1893, pg. 3).

By 1896, the complaint was voiced that the existing cemetery was “entirely too small and is crowded so much it is almost an impossibility to find room for another grave” (*Edgefield Advertiser*, September 22, 1896, pg. 3). This issue – and the need for a new cemetery – was again raised in 1899 (*Edgefield Advertiser*, February 8, 1899, pg. 3).

Beginning in 1901 there was a yearly string of articles complaining about conditions. In 1901, the complaint was made that people were stealing flowers (*Edgefield Advertiser*, April 10, 1901, pg. 3). The following year the complaint was made that the cemetery had been “given up to briars weeds and bushes” and the paper recommended that gates and walls needed repair to “keep out stray cows.” The article also informs us that the upkeep of the cemetery had been assumed by the Town Council (*Edgefield Advertiser*, April 9, 1902, pg. 3).

In 1904, another complaint was made on the care of the cemetery,

Not only do the walks and square need to have the bushes and weeds cut from them but the walls should be replaced where they have fallen down. While the cemetery is in very close

proximity to the Baptist church, yet it is the cemetery of the entire community and not of the church solely... the regular conference of the Baptist church a committee was appointed to confer with the town council and citizens generally to the end that something be done to improve the last resting place of our friends and loved ones. The dividing wall between the old and the new cemetery should be removed and the two should be enclosed as one lot (*Edgefield Advertiser*, June 27, 1904, pg. 3).

From this, we can learn that the town was doing a poor job of maintaining what was by then thought of as belonging to all (white) citizens. In addition, as early as 1890, the cemetery had been enlarged and there was some perceived difference between the “old” and “new” cemetery, even though they abutted each other.

By 1905, the cemetery was described as being in “deplorable condition” and for the first time the idea was raised of a “committee of the citizens” assume control (*Edgefield Advertiser*, August 2, 1905, pg. 3). A meeting to create such an association was called for September 1906, but “something less than a dozen individuals responded” and a second call was made later that same month (*Edgefield Advertiser*, September 19, 1906, pg. 3; September 26, 1906, pg. 4).

Apparently, such an organization was formed since in October the newspaper complemented “Dr. Burts and the ladies of the cemetery association” for the improving conditions (*Edgefield Advertiser*, October 31, 1906, pg. 3). This was Charles E. Burts, the pastor of the Baptist Church. Dr. Burts organized a Chrysanthemum Fair to raise money and by 1908 was planting hedges and shrubbery. In addition, “the eastern side of the old cemetery has recently been enclosed by a substantial wire fence.” But perhaps most astonishing is that a man was being employed full

time to care for the cemetery (*Edgefield Advertiser*, January 29, 1908, pg. 3). The following year the improvements were so grand that it was noted, "the Village cemetery is now so beautifully kept that every resident of the town should very cheerfully contribute to the cemetery improvement fund" (*Edgefield Advertiser*, February 17, 1909, pg. 5).

Dr. Burts was still active in 1910, and the secretary of the organization was writing letters to families who had left the area, asking that they, too, contribute to the upkeep of the cemetery (*Edgefield Advertiser*, February 9, 1910, pg. 4). The organization was still active in 1915, the last time through 1922 that it was mentioned.



Figure 7. Portion of the 1935 Soil Map of Edgefield County showing the Willowbrook Cemetery and surrounding neighborhood.

In 1935, we have a map identifying the cemetery and the neighborhood around it (Figure 7). There are abundant houses facing the cemetery on the west side of Church Street. Houses are also shown on the north side of Addison Street to the north of the cemetery and along the west side of Wigfall Street, primarily south of the cemetery. There is also a drive along the south side of the

cemetery, terminating at the southeast corner. At this point the church building (which must be the central core of the church as it stands today) was south of this road and not abutting the cemetery. Thus, this map suggests the church has edged ever closer to the cemetery as it expanded northward.

An aerial photograph from 1962 (Figure 8) reveals that the lower circular drive had already been added (and thanks to local politicians, incorporated into the state highway system). Vegetation is not as thick, but the church has also assumed its modern footprint.

There is a 1984 newspaper article that includes a photograph of the cemetery and at that time, the monuments are almost entirely obscured by tall weeds. The article describes how the cemetery had "fallen into a sad disrepute and has become an eyesore" ("Willowbrook Cemetery, *The Citizen-News*, Edgefield, SC, August 23, 1984).

By this time there was no corporate memory of either the committee that took charge of the cemetery or that this committee was under the direction of the pastor of the Baptist Church. The then pastor is quoted, "Somewhere along the line," Rev. Michael Glen, pastor of the church, remarked, "the matter of upkeep fell into the lap of First Baptist Church."

This was in spite of the Edgefield Civic League and Edgefield Cemetery Association merging in 1915 (*Edgefield Advertiser*, June 2, 2015). The Cemetery Association was actually chartered by the State of South Carolina in 1900.

Just a few years later, a second photograph shows the tall grass and brambles in the cemetery,

suggesting that there still was no routine care being provided (“Where Sleep the Brave,” *Edgefield Advertiser*, March 5, 1986, Sect. 2, pg. 6).

In 1992, the Edgefield Cemetery Association filed with the Internal Revenue Service as a 501(c)(13) and its budget is less than \$50,000 annually. As recently as 2017 the Association’s CEO, Doug Timmerman, was appealing for funds to support the organization, which by all accounts operates on something less than a “shoe-string” budget (*Edgefield Advertiser*, April 26, 2017).



Figure 8. 1962 aerial photograph of Willowbrook Cemetery showing it much as it is today.

The Cemetery Location, Setting, and Context

Willowbrook Cemetery, originally at the northern edge of the town, is today surrounded by well-tended residential neighborhoods. It is bounded on the west by Church Street. To the south is the First Baptist Church and beyond the church buildings is Simpkins Street. Along the east side of the cemetery is a neighborhood that fronts on Wigfall Street. To the north is a wooded parcel, although just beyond that are additional houses and Lynch Street. Although Edgefield has established a land development ordinance, much of the county remains essentially unzoned and outside the few zoning categories established. This includes the location of the cemetery, in spite of its location within the Edgefield Historic District.

General Site Development Standards, while noting historically significant sites, specifies that they should be “preserved to the extent consistent with the reasonable utilization of the site” – a rather weak standard.

All of the roads surrounding the cemetery are two-lanes and located a block north of the major US 25 artery through Edgefield (with a 2017 AADT of 5,300 vehicles; a decline from 6,300 in 2009), very little traffic was observed during this assessment. For comparison, Norris Street, one block to the south of US 25, had a 2017 AADT of only 650 vehicles.

Thus, while the cemetery is certainly situated in an urban area, there is little traffic or traffic noise. The surrounding structures are all one-story and vegetation both on and off the cemetery does a relatively good job of providing screening. Problems were observed along the east side of the cemetery where it backs up on rear yards. Not all of these yards are as well maintained as are the



Figure 9. Poorly maintained property boundaries. At the top is the eastern line. At the bottom is the northern line. Both require immediate attention.

corresponding front yards. This may, however, relate to the relatively poor maintenance of the cemetery, with adjacent homeowners having little reason to clean out their property, only to see the growth in the cemetery. Nevertheless, it would be useful for there to be additional, low, screening along the fence line, after the cemetery thoroughly cleans the line. It is important to balance screening with security and also recognize that screening is not the equivalent of “privacy,” nor should it be. Screening should strive to moderate views and help to establish and maintain the cemetery setting.

A similar problem was observed at the north edge of the cemetery, where it appears that mowing and cleaning are essentially abandoning plots to the woods. This is not only disrespectful, but it creates a nuisance and is attractive to snakes and rodents.

While there are sidewalks in the immediate downtown area, they do not extend to the cemetery. Also absent are bike paths. Nevertheless, we do not perceive that many cemetery visitors would be walking or biking. Edgefield does have public transportation, but it is scheduled and there are no routes. Therefore, it is unlikely to be widely used to access the cemetery.

There is a one-lane entrance road to the north part of the cemetery, but it only provides convenient access to the lowest portion of the cemetery (which also happens to include the Thurmond plot). Those using this road have to park on the road, blocking it for other use.

Otherwise, there is a narrow turn-off, sufficient for parking one or two cars at the south end of the cemetery on Church Street. It is at this cut-off that a narrow pathway (initially paved and subsequently concrete) runs parallel to Church Street, within the cemetery, linking the southern and northern sections (see Figure 5). There is, however, abundant weekday parking at the Baptist Church. There are sidewalks from the Church parking, along the side of the building, that exit into the cemetery using stairs.

The Town of Edgefield is located within U.S. Census Tract 9701.02. This census tract has a median age of 42.5 and males dominate 62% to 38%. The community is slightly weighted to African Americans (47%), with about 8% Hispanic. The Median household income is \$40,800, which is nearly 1.5 times the median for the county as a whole. The median household income for whites is nearly double that for African Americans. Nevertheless, 56% of the households make \$50,000 or less and 17.8% of the population is below the poverty line. This is about two-thirds the rate for the county as a whole (which is 26.7%). As might be expected, most of the poverty is found in African American communities. While the unemployment rate in South Carolina is 4.4%, it is only 4.3% in Edgefield County.

Households are relatively small, consisting on average of only 2.5 people. Most of the households (53%) represent married couples.

About 11% of those 65-years or older have some disability.

Edgefield exhibits a high rate of occupied dwellings – about 87%. Two-thirds of these are owner occupied. Not surprisingly, whites tend to more commonly be owners, while African Americans are generally renters. Most of the owner occupied houses are relatively modern, built between 2000 and 2004. The median value of owner-occupied housing is \$117,500, about 25% higher than for the Town (\$92,300), but about equal to the county generally (\$119,300). Fully 84% of those in this census tract lived in the same house a year ago.

Nearly four-fifths of the census tract had graduated for high school or higher, with about 15% having a bachelor's degree or higher. This is about 1.5 times higher than for the town (9.3%), but only 80% of the rate for the entire county (18.6%). Only 8% of the census tract population is a military veteran (most commonly Vietnam), although this is slightly lower than for the entire county.

What this suggests is that those living around the cemetery are most likely white, middle-age, relatively well educated, stable, with small households, and better than average incomes. Thus, while the neighborhoods surrounding the cemetery are not especially ethnically diverse, they are older, stable, and educated. These factors are likely to support preservation efforts.

While agriculture was once the mainstay of the Edgefield economy, it is increasingly based on industrial, manufacturing, and retail. The number of farms between 2008 and 2012 has declined by 4%, but these have tended to increase in size. Over half of the farm acreage is today in wood lots, with just over a quarter representing cropland. The single largest crop today is peaches and Edgefield ranks second in this crop in South Carolina. Farmers tend to be white, male, and approaching the age of 60.

Edgefield, typical of many rural communities, tends to have a very low crime rate. The city-data.com crime index (high number means more crime, US average is 277.0) is 72.2 for the most recent year, 2016. This represents a significant drop from 2012, when it was 223.4. Nevertheless, the property crime rate for 2016 was 85.0, higher than the violent crime rate for the same period. This is significant since it is property crimes that are most likely to cause damage in cemeteries.

This low crime rate is somewhat surprising given that Edgefield has only nine full-time officers (1.89 per 1,000 residents, compared to the state average of 2.85 per 1,000).

The 2017 Point in Time count of the homeless in Edgefield County identified no homeless individuals in the county. In adjacent Aiken County, 37 were reported and in Saluda County, 36 were reported. In general, the homeless population tends to be larger in larger, urban counties such as Greenville, Charleston, Richland, Lexington, and York, where a greater variety of services is present.

Factors Affecting the Landscape Character

Most of Edgefield is situated in the South Carolina Piedmont, where topography is gently rolling to steep and elevations range from 500 to 1,500 feet above mean sea level (AMSL). Most of the rocks of the Piedmont are gneiss and schist, with some marble and quartzite. Toward the southeast corner of the county is an area of the Coastal Plain and the associated Fall Line. The town of Edgefield is situated on ridgelines separated by Beaverdam Creek that runs northwest-southeast (Figure 3) through the center of the community. The topography in and around the cemetery slopes from the south to the north, toward Willowbrook Creek (a tributary of Beaverdam). Elevations in the cemetery vary from 516 feet to 480 feet AMSL. The topography surrounding the cemetery is even more variable, being influenced by the dendritic drainage pattern typical of the Piedmont. Elevations slope to the northwest, toward Beaverdam Creek, and to the northeast and south, toward various tributaries.

Only one soil is identified in the cemetery – Cecil sandy loam, 2-6% slopes. This is a deep, well-drained, gently sloping soil that is found on broad ridges and gentle slopes adjacent to drainages. The high water table is typically below 6-feet in depth and bedrock is 60 feet or more below the surface. The soils are generally weathered from granite, gneiss, or schist.

The typical Ap horizon is about 0.5 foot in depth and consists of brown (7.5YR5/4) sandy loam. The soil is usually strongly acidic and low in soil fertility. Below this is the B21t horizon to a depth of nearly 2 feet. This is a red (2.5YR4/6) clay (Herron 1981:54).

As Figure 10 reveals, the lowest corner of the cemetery is mapped within the 100-year flood zone; it is likely, however, that a more substantial portion of the property would be inundated by an increasingly common 500-year flood, especially along the northern edge.

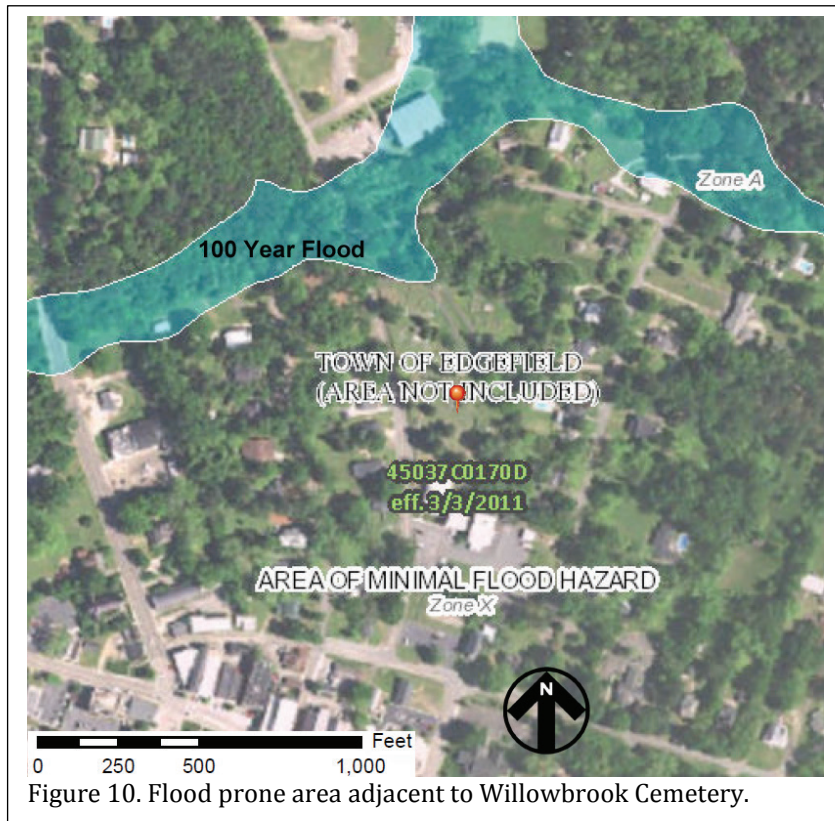


Figure 10. Flood prone area adjacent to Willowbrook Cemetery.

A 100-year flood would also eliminate cemetery access except from the south, requiring all recovery efforts be routed through the downtown area.

Edgefield is characterized by hot and humid summers because of moist maritime air. Winter temperatures are moderately cold, but usually of short duration because of the mountains to the west offer some protection to the county. The average summer high is 92.5°F and the average January low temperature is 32.4°F. But the county is humid most of the time, with a July average of 90% and a January average of 80%. Air exchanges are less frequent in the summer and maritime tropical air can persist in the region for relatively long periods – giving rise to very warm, humid days.

Precipitation is evenly distributed throughout the year and has historically been adequate for all crops. There are 72.5 precipitation days and the area typically receives 45.8 inches of rainfall (and 0.6 inches of snow).

Figure 11, however, reveals that South Carolina exhibits considerable potential for drought, especially in recent years. It is only in 2018 that the state is climbing out of three years of below-average rainfall.

The area has an average growing season of about 217 days, although this will vary by specific location, with low areas often evidencing late frosts. Figure 12 shows that all of Edgefield County is situated in Plant Hardiness Zone 8a, where the minimum temperatures are expected to be between 10 and 15°F. Since this “new” planting zone map was

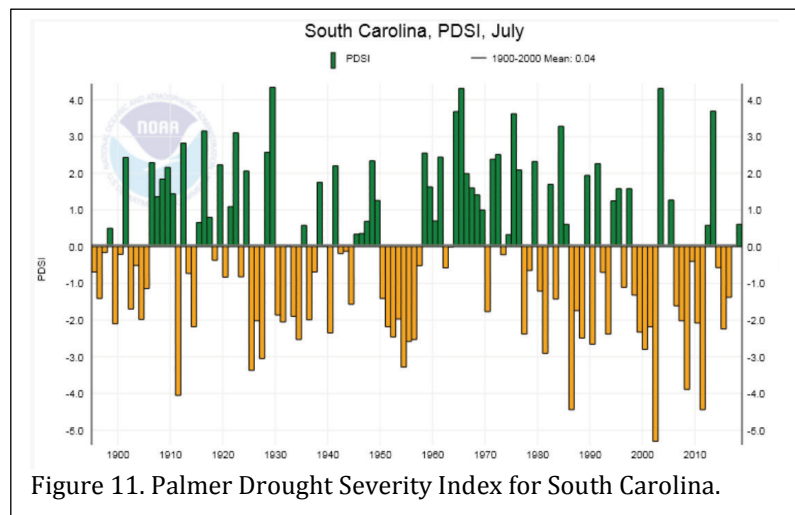
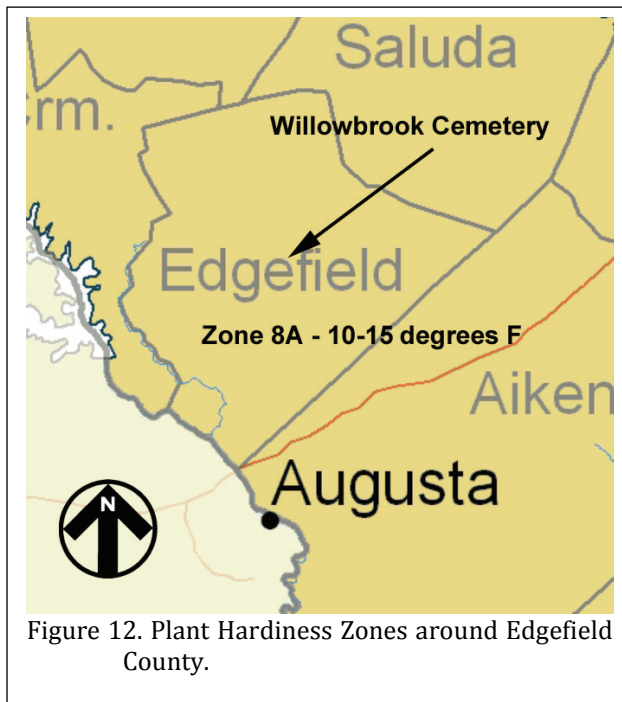


Figure 11. Palmer Drought Severity Index for South Carolina.

released, the zones have shifted even further northward, potentially placing the higher elevations of Willowbrook Cemetery in Zone 8b.



This is an area where hot climate grasses, such as centipede, bermuda, and zoysia are typically successful.

Another significant weather phenomenon is tornadoes. Edgefield County has seen 19 between 1974 and 2015. Two people have died and



Figure 13. Significant damage created by the May 29, 2018 storms (photograph courtesy WMBF news).

25 have been injured. The longest path has been 67 miles; the widest has been 880 yards. Of course, additional tornadoes have also hit surrounding counties. While none has directly hit the Town of Edgefield, this is nevertheless a disaster for which caregivers should prepare.

Weather-related disasters need not be so significant. As the May 2018 rain and windstorms proved, even more-or-less routine weather events can cause significant damage in a cemetery, especially if the caregivers have not adequately prepared by ensuring that trees are healthy and appropriately pruned.

A factor affecting not only the landscape but also stone preservation is the level of pollutants. Based on monitoring in the region, the annual mean of NO_2 is 0.053 ppm and the annual mean of SO_2 is 0.011 ppm. These levels result in significant levels of acid rain with pH levels reaching about 4.6. There is one EPA identified source of air pollution in the immediate area – the SC Army National Guard base only 0.5 mile southeast of the cemetery. There are three generators of hazardous waste – two within a third of a mile to the south, as well as the National Guard base previously mentioned.

This review reveals that the cemetery faces a variety of natural and man-made environmental factors, all of which have the potential to impact monuments, the cemetery hardscape (such as roads) and the cemetery vegetation. Long-term preservation involves balancing all of these concerns.

The only way for cemetery caregivers to deal with all of these potential events is to develop a detailed

cemeteries disaster plan. Just as museums, libraries, archives, and businesses must have plans to deal with floods, loss of electrical power, hurricanes, and weather events, cemeteries too must be ready to respond when there is a significant event – either weather-related or caused by humans.

Chicora Foundation has developed a detailed manual to assist cemeteries in disaster planning, but it is critical that Willowbrook take the threat seriously and conduct the planning in order to respond in an effective and timely manner.

Recommendations

- A meeting of the Edgefield Cemetery Association (and related organizations) should be devoted to a careful review of the Secretary of Interior Standards. The caregivers should focus on a fuller understanding of how daily operations affect the long-term preservation of the cemetery, making necessary adjustments to current policies and procedures. At that meeting, this assessment could be further explored.
- There is insufficient historic understanding of the cemetery. Historic research should focus on the development of the cemetery with an end result suitable for various public education needs. Particular research topics should include town records, as well as newspaper accounts, as well as a careful assessment of Edgefield County deeds. Another significant topic is the evaluation of burial claims far earlier than is typically accepted. All of these are excellent volunteer opportunities and are critical before any future public education components are developed.
- The cemetery should prepare a disaster plan to cover events such as flooding, tornadoes, windstorms, and similar events.

Administrative Issues

In this section, we will examine a limited range of administrative issues that affect preservation efforts, including the absence of laws protecting the cemetery and the financial condition of the caregivers. It is important to realize that we are neither attorneys nor financial planners and the observations made here are intended to promote discussion and further exploration.

Ownership of the Cemetery

We doubt that this is seen as a significant issue to many in the community; we disagree. After conducting assessments on perhaps a hundred cemeteries or more and from Maine to Mississippi and as far west as Montana, we have never found a cemetery without an owner. In fact, it is virtually unheard of, in twenty-first century America for a piece of land to have no owner.

This is an issue because, without an owner, who has the rights – and obligations – that may be associated with the common areas of the cemetery? Who has liability for injury? Who has the authority to establish rules and regulations to protect and to care for the property? In addition, who has a legal responsibility for the care and maintenance of this property?

For example, if a tree on a plot is diseased and endangering monuments, who is legally authorized to remove the tree and defend this decision? If a diseased or damaged tree falls on my plot and damages the stone, who is legally responsible to making me whole?

At the present time, some may say that the de facto (i.e., in fact or in effect, whether by right or not) owner is the Edgefield Cemetery Association. This may be. Yet our brief historical review clearly reveals that at different times the Town of

Edgefield was responsible for the cemetery's upkeep, as was the Baptist Church. In fact, the Edgefield Register of Deeds ascribes the cemetery property to the Baptist Church.

Thus, before much of anything can be done it seems to us that a critical issue is to determine ownership. This ownership is not simply an issue of attempting to file a quitclaim deed; rather it should explore who is legitimately responsible, in a fiduciary sense, for ensuring the long-term preservation of these graves.

We suspect that no one truly desires to come forward and claim (or accept) ownership of a cemetery that is full, unable to generate any funds for maintenance, and that has the great number of issues that this assessment will document.

As a result, it may require that concerned parties decide to settle the question legally and force some entity to accept responsibility. Alternatively, all of the parties involved – the Edgefield Cemetery Association, the Baptist Church, other community churches that used the property for burials, and the Town of Edgefield, all create a memorandum of understanding, establishing who has what responsibility and the extent to which each entity will be financially responsible.

We have no doubt that this will be a messy and, to some degree, angry discussion. Nevertheless, the community benefited from this burial ground for nearly 200 years and even today talks lovingly of those buried there. As a result, the entire community must recognize the shared responsibilities for long-term maintenance.

It should be unnecessary for us to explain that a small, non-endowed, non-profit cannot, over

the long term, successfully ensure maintenance. Nor should this one organization be required to bear the burden for the entire community.

Of all of the issues raised in this report, establishing an equitable and secure funding source is the most significant issue – and it must be addressed prior to any future actions. In the colloquial, the time of judgement has arrived and the community must deal with this issue.

These same issues likely apply to Eastview Cemetery in Edgefield, although fortunately that cemetery is not within our purview.

Laws Protecting the Cemetery

The Town of Edgefield has no ordinances to protect or encourage the preservation of this cemetery (or any part of the Town of Edgefield Historic District). We find this ironic considering how much we read about the town and the community valuing its heritage. Value is of little consequence if it is not matched by proactive preservation.

What laws there are deal with activities such as control of animals, consumption of alcohol, generating loud noise, etc. These might be sufficient. However, without an owner, who is the complaining party? Who would be harmed by any of these activities? These are especially vexing questions if there are no longer any identifiable living members associated with a particular plot.

South Carolina Code of Laws, Section 16-17-600 et seq. is intended to protect burials and burial grounds. The law makes it a criminal offense to damage or desecrate human remains; damage the burial grounds, grave, tomb, or mausoleum; damage or remove a gravestone or marker; steal anything; or to damage any fencing, plants, trees, shrubs, or flowers. But because this is criminal law, it requires that the action(s) be willful and knowing and these conditions can sometimes be difficult to prove. As a result, this law is rarely enforced. It is our view that it offers very little protection to

cemeteries and should not be relied on to protect a community cemetery.

In a following section, we will identify the rules or regulations we believe are essential to protect cemeteries.

A Look at Perpetual Care

Perpetual care is a term bandied about, often without a great deal of thought. South Carolina Code of Laws, Section 40-8-10, defines the term as “the maintenance and the reasonable administration of the cemetery grounds and buildings in keeping with a cemetery properly maintained using a care and maintenance trust fund.” Unfortunately, Willowbrook is not a perpetual care cemetery – even if it does, in fact, deserve care in perpetuity. But even if it were, South Carolina’s laws are lax in our view. Appropriate care is poorly defined as,

“Cared-for” means the physical appearance including, but not limited to, shrubs and trees pruned and trimmed, flower beds weeded, drives maintained, and lawns mowed when needed equivalent to once a week during grass growing season with ample rainfall Section 40-8-30(4).

The law also requires a set-aside of only 10% of the sale price of plots – far too low an amount in our opinion to ensure a lifetime of escalating maintenance costs. As an example, an endowment of \$200,000 today is unlikely to generate much more than about \$500 in interest – insufficient to cover even a few months of mowing. It is worth noting that our neighboring state of Georgia has much more effective perpetual care laws.

Regardless of the law, appropriate care of a cemetery includes a vast range of maintenance activities, including,

- Mowing,
- Raking,

- Pruning,
- Weeding,
- Upkeep of drains,
- Upkeep of roads,
- Caring for monuments,
- Maintaining buildings and other improvements (such as water bibbs),
- Infilling and sodding or seeding graves, and
- Signage regarding the cemetery office.

Smith observes that what a cemetery sells – including Willowbrook when plots were being offered – is not simply real estate, but rather the security of perpetual care (Smith 1996:166). The attractiveness of a cemetery to both at-need and pre-need purchasers “is the adequacy of their perpetual care funds” (Smith 1996:224).

At the present time, the Edgefield Cemetery Association is spending about \$500 to mow Willowbrook – or about \$83 an acre. We will return to this absurdly low figure in future discussions.

Three conclusions are clear. The first is that the cemetery is significantly underfunded. The second is that for 200 years citizens expected someone in the future to subsidize their low cost cemetery lots. Taken together, these create an unsustainable funding base.

And the third conclusion is critical. With current rising maintenance costs, the community is quickly reaching a crisis point in cemetery care. At some point, probably in the near future, the current system of care will collapse and the cemetery will rapidly become an eyesore.

John F. Llewellyn (1998) provides a mechanism to test the adequacy of endowment or perpetual care funds. He notes that this process of testing determines “how well the cemetery is doing in fulfilling its ultimate responsibility to the families who have entrusted their loved ones to it and to the community” (Llewellyn 1998:151). Simply put, having a fund that is sufficiently large to provide the income necessary for the care of the

cemetery far into the future is a fundamental responsibility.

Cemetery PR and Funding

We are told that there is an organization, “Friends of Willowbrook Cemetery” to provide “education and tours.” The only report of this organization we can find is an article in the *Aiken Standard* (“Locals Strive to Preserve Willowbrook Cemetery,” *Aiken Standard*, July 14, 2014 pg. 1). This organization is not listed with the South Carolina Secretary of State and, as we understand it, is really just a “committee” of the Edgefield Cemetery Association. They have published a brochure and offer memberships, but we really cannot determine the organization’s effectiveness in either education or tours. It does not appear to be a major cash generator. Tours are only \$5, and a grave can be “adopted” for \$40 a year.

In the second part of the *Aiken Standard* article, readers were advised to “visit www.oedgs.org and click on the Willowbrook Cemetery link near the top of the home page.” Doing so takes you to the Old Edgefield Genealogical Society and there is no mention of either the Edgefield Cemetery Association or the Friends of Willowbrook Cemetery. There is what we suppose a competing organization, the Edgefield Preservation Association. It is not listed with the Secretary of State as a charity, although there is an LLC by the same name, organized in 2016.

Edgefield appears to have a variety of organizations with somewhat similar goals, all competing for a slice from the same “pie.” These include the Old Edgefield Genealogical Society (“promote genealogical and historical research in Old Edgefield District”), the Edgefield Preservation Association (“dedicated to preserving and enhancing the unique historic properties of Edgefield County”), the Edgefield Cemetery Association (“dedicated to the operation, restoration, and preservation of Willowbrook and Eastview Cemeteries”), and Friends of Willowbrook Cemetery (“to restore, preserve and promote the cemetery”).

We are not tasked with examining this multitude of somewhat similar organizations and examining their financial stability. However, the individual organizations should consider meeting and looking at opportunities to better coordinate and cooperate. Perhaps it is possible to combine some organizations to streamline operations and expand membership bases.

Other than the previously mentioned brochure, we have been unable to identify much impact resulting from the Friends organization and the Edgefield Cemetery Association seems likewise to have a relatively low profile.

As we reviewed the various websites (which tend to attract far more attention today than printed materials), we failed to identify much effort to explore opportunities to create and reinforce relevance. There seems to be an overwhelming emphasis on the past citizens and glory of Edgefield. This is likely to be attractive to an increasingly smaller population.

Those interested in the preservation of Willowbrook should examine the very effective public outreach program of Atlanta's Oakland Cemetery (<http://www.oakland-cemetery.com/>). The Historic Oakland Foundation has an excellent website that promotes a broad range of cemetery activities, including multiple tours, other events, and offers opportunities for on-line donations. A review of this site should provide multiple ideas for activities that could be held at Willowbrook throughout the year, including special topic tours (such as Oakland's Malts and Vaults, where brewing and history combine) or the annual Christmas tour.

Another cemetery worthy of imitation is Spring Grove Cemetery in Cincinnati, Ohio (<http://www.springgrove.org/>). It was created in 1845, is a non-profit, and is also a landscaped rural cemetery. It, however, incorporates 733 acres, of which 450 acres are developed. The cemetery focuses on the business of providing cemetery services, including pre-need, but it has an exceptional community outreach program. The

entire cemetery is an arboretum. Its website has a calendar of community events on the grounds, including tram tours, walking tours, twilight tours, monuments by moonlight tours, horticultural tours and talks, fall foliage tours, summer family nights, 5K runs and walks, open air concerts, grief to peace programs, remembrance walks, champion tree walking tours, plant identification tours, an Easter sunrise service, birding tours – the list is almost endless.

We recognize that Willowbrook is smaller, has (at least initially) a smaller audience, and has more limited resources, but the key should be to encourage as much public visitation as possible – coupling that visitation with donations.

Monthly programs should be the goal, but first it is critical that the overall condition of the cemetery be dramatically improved. We fear that Willowbrook is the “poster child” of “it takes money to make money.” Nevertheless, those activities for which community support can be found should be implemented.

In this vein, it is also important that donors clearly understand the purpose of their donations. For example, although if every one of Willowbrook's 1,000 plus graves received a \$40 adoption fee, the resulting \$40,000 would be more than sufficient to care for the cemetery, what does a single \$40 donation do for a grave? As a potential donor, I don't know. Perhaps it would be more useful to offer support in categories such as:

	Mow	Trim	Both
¼ acre	\$50	\$38	\$88
½ acre	\$100	\$75	\$175
1 acre	\$200	\$150	\$350

This would allow donors to know precisely what they are funding and what level of support they are providing. It also offers the organization an opportunity to up-sale supporters in the future: “Last year you were able to help us mow a quarter acre. Is it possible that you can help us with the mowing *and* trimming costs for \$88?”

The cemetery organization must also begin to explore ways of cooperating with the African American community and adding their story to the cemetery. As we have implied previously, it is no longer appropriate to tell only the story of “old dead rich white men.” Women and persons of color must be added to attract wider audiences, especially from outside the area.

Both the Edgefield Cemetery Association and Willowbrook lack a website and this should be remedied as soon as practical. A website can announce tours and events, spotlight different activities, encourage on-line giving, focus on unique characters (as long as they represent a cross section of society), offer teaching curricula and ideas on how to integrate the cemetery into classroom activities, recount the cemetery’s history, include photographs of different monuments, and photographs of community volunteers working in the cemetery. Even the work of outside contractors (such as mowing) should be included since that helps donors know how money is being spent. This website should provide copies of the electronic newsletter, *Inscriptions*, which is promoted in the brochure.

The website should list the rules of the cemetery and should provide a list of burials, tied to photographs of monuments.

Some of these may already be provided by other sources (for example Find A Grave™), but everything should be brought together under one roof. There should be one place to go for all things Willowbrook.

Recommendations

- The Association should investigate ownership to resolve questions regarding control and maintenance obligations.
- At a minimum, there should be a memorandum of understanding prepared in which all of the players – the Town of Edgefield, the Association, the Baptist Church, and other organizations parcel out

fair responsibilities, obligations, and commitments.

- The existing laws should be significantly expanded to ensure the preservation of the cemetery. Suggested additions are provided in a following section.
- The Association should consider joining forces – formally or informally – with the other Edgefield organizations with preservation as their central theme.
- The Association should develop a Willowbrook website. It should be maximized as a sales tool, including information on donor opportunities with options to make the donations using PayPal or credit cards. The website should include a listing and photographs of plots and monuments. The website should provide a meaningful history of the cemetery. The website should provide news and photographs of tours, work in the cemetery, etc.
- Once the cemetery is in better condition, the Association should begin quarterly activities, eventually taking on more frequent programming.
- The Association should begin contacting plot owners in an effort to enlist them in funding lot-specific improvements and repairs.
- The Association should adopt a more meaningful method of grave adoption, ensuring that the funds solicited can actually accomplish something specific and meaningful.

ADMINISTRATIVE ISSUES

Roads and Pedestrian Issues

Vehicular Access and Circulation

As previously mentioned, there is a one-lane road entering the lower, northern section of Willowbrook off Church Street. This one-lane road has been entered into the state system as S-123. As far as we can determine, the primary benefit is to provide access to Thurmond plot at the northwest corner of the lower section.

The road loops around at its terminus, with the small tributary to Beaverdam Creek in the center.

We are told that the South Carolina Department of Transportation repaved this road in 2014, although this is difficult to believe considering the amount of grass that is already growing through the asphalt. This suggests that either there was little or no rock base and/or the asphalt top coat is thin. The amount of grass we observed should not be growing through asphalt four years after repaving.

While taking cores would help resolve the problem, in the immediate future the grass should be sprayed with a good quality residual herbicide and after it is dead, manually removed. The asphalt should have a sealer applied to help minimize future penetration.

Another issue we observed is that the road, lacking curbs, has grass overtaking the margins because it is never (or rarely) trimmed. This results in two significant problems. The first is



Figure 14. One-lane S-123 off Church Street, providing access to the Thurmond Plot. The top photo is looking east, the lower photo is looking west with the creek in the center of the loop.

that the roadside has an unkempt appearance, detracting from the cemetery landscape. The second problem is that this vegetation growth exacerbates edge cracks and serves to deteriorate further the asphalt pavement.

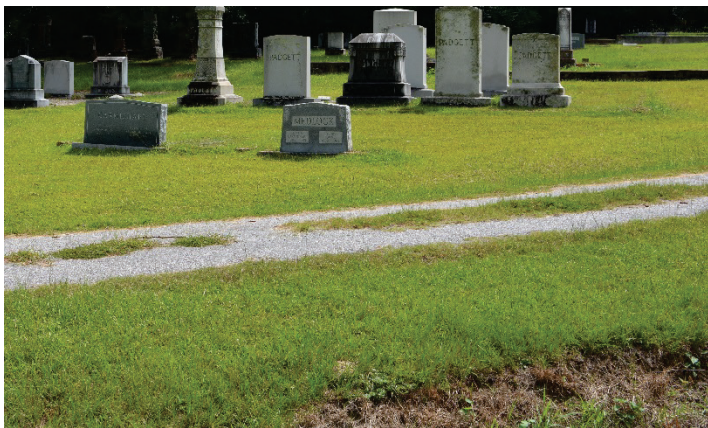


Figure 15. Grass growing through the asphalt paving.

Road edges should be trimmed on a yearly basis. While this is often done with nylon trimmers, this is a poor technique. A better choice is the use of a commercial walk behind edger.

At the entrance to the cemetery created by this road, there were originally two brick gate columns. These columns are shown standing in an undated Find A Grave™ photograph (<https://www.findagrave.com/cemetery/2422814/edgefield-village-cemetery#view-photo=9193187>). Today one column has fallen and is found in the cemetery. The remaining column is still standing.

It seems unlikely that the columns are historic. However, if they are, the damaged column should be repaired. If they are a recent addition to the cemetery and repair is unwarranted, then the remaining column should be removed and both disposed of.

Otherwise, there is no vehicle access to the cemetery and only a two-car pull-off along Church Street near the Baptist Church.

This is problematic for significant site events (although there is parking in the nearby Baptist Church lot), handicapped access (discussed below), and maintenance activities (since it significantly limits access).

Church Street Retaining Wall

There is evidence of a brick retaining wall along the west side of the cemetery, bordering Church Street. These remnant wall sections are anywhere from 13 to 20 feet from the centerline. Between the road and these wall sections there is no shoulder, but there is a ditch.

We suspect the wall sections are on the cemetery property and not within the road right-of-way. Nevertheless, the Association should inquire to the Department of Transportation and may ask to have the right-of-way staked for reference.

The importance of this issue is that this wall is failing and there is associated erosion that will only get worse without treatment.

News accounts mention the need to repair walls “where they have fallen down” and there are still intact walls in a few sections along Church Street (see, for example, Figure 1). We therefore are inclined to believe the walls we are talking about (one of which is illustrated by Figure 16) are likely part of the historic fabric of the cemetery and every effort should be taken to ensure their survival.

This will require, minimally, repair using appropriate mortar for pointing and efforts to further stabilize the bank.

Elsewhere, at least today, there is only bare soil with steep cuts (see Figure 16). It is well understood that the highest erosion rates are observed on road cuts with steep slopes, low vegetation cover, and the presence of loose colluvium. One mechanism for stabilizing such cuts is to terrace or slope the cut further into the cemetery. This, obviously, is impossible given the density of burials.



Figure 16. Erosion along Church Street. The upper photograph shows a section of failing brick wall with significant tree damage. The lower photograph shows a very steep soil bank.

At times, it may be possible to establish vegetation along the road cut through hydromulching. This is a technique that relies on spraying a mixture of water, fiber mulch, and tackifier on slopes over 20% to prevent soil erosion or foster revegetation. Seed, fertilizer, or soil stabilizing polymers may also be applied with the hydromulch. The type and amount of mulch and tackifier should be selected to provide a minimum of 70% surface cover that will remain in place for at least one growing season. The actual materials and application rates should be determined by erosion control experts, taking into consideration the specific site characteristics (including the shade in some areas) and the very high level of protection that is required for the cemetery.

If this is unsuccessful, the only other option is to create a retaining wall along Church Street. Such a wall should be specifically engineered for the site conditions and to comply with any DOT regulations.

Whatever approach is used, the DOT should be expected to participate, if not lead, in the funding. As a first step, the Association should sit down with engineers from the South Carolina Department of Transportation to determine what assistance that agency can provide to ensure that the cemetery is protected.

Pedestrian Pathways

As noted, the only other entrance to the cemetery is a steep pathway from a pullover along Church Street. This leads to a narrow concrete sidewalk that runs roughly north through the cemetery to the loop road at the north end.

There is nothing suitable about this situation. The pathway has been poorly



Figure 17. Pedestrian access. The upper photo shows the asphalt leading from the parking space up to the sidewalk. The lower photograph shows the partially obscured and obstructed sidewalk leading to the road in the northern section (in foreground on left).

maintained. There is abundant grass growing in cracks and along the edges. In some areas, overhanging vegetation prevents its convenient use. The access “ramp” is too steep for it to be wheelchair accessible. In fact, it is somewhat steep even for normal ambulatory individuals. The concrete material is stark and does nothing to promote the ambiance or feeling of the cemetery.

Finally, the primary reason for established

pathways is either (1) they are part of the historic plan or (2) they are necessary to help control large crowds. Neither seems to be the situation at Willowbrook.



Figure 18. Concrete sidewalk showing its neglected condition with grass growing in cracks and mowed grass accumulating along the edges.

The path may be left in place, but it must be adequately cleaned of grass and debris on a regular basis to render it usable. Otherwise, consideration should be given to removing the concrete and converting it into a grass pathway or porous pavers (see below).

Universal Access

Many who visit cemeteries are elderly and therefore impairments associated with older age should particularly be taken into consideration,

especially when cemeteries are amenities for tourism as in the case of Willowbrook Cemetery. In addition, while it is not always possible to make a natural landscape fully accessible, partial access is better than none at all.

Steep grades are found in several areas, such as attempting to access the cemetery at the parking area, and upon existing the sidewalk at the northern road. There are stairs, not ramps, if the cemetery is accessed from the Baptist Church rather than Church Street.

These areas will be extremely difficult and dangerous for many people with disabilities to use. The remainder of the Cemetery, however, is more accessible, at least with regard to the slope. Some areas have rough terrain and in a few locations the proximity of monuments can make movement difficult. There are also sunken graves that pose significant threats to pedestrians of all ages and conditions.

The existing grass is a less than ideal surface for wheelchairs and others with mobility or sight disabilities. However, as we have explained, we do not recommend the installation of pathways at this point. The grass can be made somewhat more wheelchair or walker friendly if it is kept mowed and trimmed. However, all future modifications should explore accessibility issues in an effort to maximize access by all citizens.

Recommendations

- The one road requires the preventative maintenance of killing and manually removing the grass and using a sealer to prolong the life of the asphalt.
- The road edges should be trimmed or edged on a yearly basis.
- There is a significant erosion issue along Church Street. Sections of what appear to be historic brick walls are failing and require appropriate repair.

- Elsewhere steep cuts have little vegetation and will eventually erode graves. A retaining wall or hydromulching is essential.
- The existing sidewalk is being poorly maintained, with grassing growing through cracks and along the edges. This reduces its benefit to wheelchairs and even poses a tripping hazard for ambulatory individuals. It should be trimmed and edged on a monthly basis.
- All future modifications at Willowbrook should be evaluated for their impact on universal access. Universal access should be a goal whenever possible.

Structure Issues

We are going to include only one “structure” in these discussions, although it is actually a below grade vault.

DeVore Vault

Legend reports that beyond the iron door there is a corridor leading to an arched crypt with the doctor was placed “sitting in a chair behind glass.” However, it is also reported that the Baptist minister filled the vault sometime in the 1950s.

Today what is clearly known is that there is a roughly rectangular iron door, set in an iron

frame (Figure 19). The treatment necessary for this door will be discussed in a following section where we discuss the other ironwork in the cemetery.

Having a coffin behind glass is not inconceivable. Having a glass viewing plate in the coffin for a burial in 1884 is also entirely plausible. Having an individual “mounted” in a chair is rather implausible.

Nevertheless, this vault has the potential for an exceptional educational and promotional opportunity. In addition, filling in the vault is likely a violation of South Carolina’s laws concerning



Figure 19. The DeVore vault.

damaging cemetery plots.

Consequently, we recommend that the vault be opened, any debris present cleaned out, and the vault thoroughly documented. The human remains, if present, would not be disturbed. If the remains are already disturbed by past vandalism, they should be collected and respectfully replaced in the coffin. The structural integrity of the vault could be assessed for the safety of future visitors (to ensure there is no collapse).

At the conclusion of the work, the vault lid could be appropriately treated, and the vault sealed. The investigations would be a significant educational and public relations opportunity – and the resulting documentation could serve as a unique exhibit either on-site or at the historical society.

Recommendations

- With the descendants' permission, the vault should be opened and investigated by a forensic archaeologist. At that time, the condition of the vault should be assessed. Afterwards the vault door should be treated for long-term preservation and sealed. The resulting information would serve as excellent educational material for tours and exhibits.

Cemetery Security

The questionnaire for this assessment stated that no records of vandalism are maintained and the last episode was perhaps 5 years ago. During our discussions, however, it was acknowledged that vandalism might have occurred more recently.

We suspect the incidence of vandalism may be higher than suspected, although we acknowledge that given the poor landscape maintenance, it is difficult to know what is mower or tree damage and what is vandalism. Of course, the end result for both is the same. Several examples are illustrated in Figure 20.

In addition, it is certain that every plot with a missing gate provides evidence of theft.

Virtually all cemeteries are occasionally plagued by vandalism. The news reports for this cemetery suggest damage to plantings as early as 1866.

Vandalism

The Association does not have a formalized mechanism for identifying or reporting vandalism. Nor is maintenance at a sufficient level to preclude the likelihood of vandalism (there is a correlation between maintenance and vandalism).

At the present time, there is no systematic inspection process by the Association. It seems unlikely that the contracted maintenance staff would recognize vandalism for what it is, or have any idea when it occurred. It will be difficult to ascertain the level of damage the cemetery suffers without some method



Figure 20. Probable examples of vandalism. The photograph at the top shows a very heavy monument recently toppled (note the very white color). The lower photograph shows a child's monument kicked over (based on the low center of gravity and the distance the die is from the base).

of periodic inspection.

There are relatively few studies of the causes of vandalism. Those that exist present a

broad range of possible reasons, including poverty, unemployment, disintegration of family life, and availability of drugs and alcohol. Other studies include problems inherent in single family homes and parents that fail to guide their children in social and moral issues. Even the judicial system itself is thought to contribute to the problem by failing to deal more harshly with offenders (see, for example, de Wet 2004).

Unfortunately, cemetery specific vandalism has not been studied and we must rely on studies largely focused on school vandalism to understand the phenomenon (although we have no assurance that the two can be reasonably related). Most school vandals are typically young (junior high school), male, and act in small groups. Participating in vandalism often helps a youth to maintain or enhance his or her status among peers. They have typically done poorly academically and have little or no understanding of how their behavior affects others. They are not, however, any more likely to be emotionally disturbed than their peers who do not commit vandalism. Those who commit vandalism are not likely to be judged harshly by their peers. Youth who lack fulltime parental supervision during after-school hours are more likely to commit vandalism.

To this, we can add that our anecdotal believe that vandalism is linked to alcohol consumption.

Physical measures to reduce vandalism – such as installing fences and erecting lights – have great appeal. Such projects are easy to understand and physical measures generally have only a one-time outlay of funds. Nevertheless, most authorities agree that vandalism is the combined result of the offenders' characteristics and those of the physical and social environment in which the behavior occurs.

If our response is to be effective, we must focus on both the person *and* the environment. Programs that target only one of these variables – such as physical measures – will not be successful in the long-term. Moreover, they run the risk of

making the cemetery appear fortress-like.

Unfortunately, measures that examine offender behavior, administrative policies, or community involvement seem more complex and difficult to implement. Group consensus for more complex programs may be more difficult, largely because the possible responses can be overwhelming. To simplify, we will focus on four main tactics:

- those that impact the physical environment,
- those that impact the offender,
- those that focus on administrative practices, and
- those that enlist the community's help.

We encourage the implementation of a balanced approach involving all four tactics and believe that the success of programs to reduce cemetery vandalism rely on a broad-based initiative.

Changes to the Physical Environment

Control access to deter unauthorized entry

The Cemetery boundary is permeable, but at one point there was a fence along the east margin of the cemetery, separating the cemetery from the rear yards of adjacent neighbors.

That fencing has been allowed to deteriorate and the area is heavily overgrown (see Figure 9). This makes it difficult to observe activities and encourages neighbors to allow their property line to also grown up.

The property lines to the east and north should be carefully maintained. Fencing along the east line should be repaired or replaced. This may necessitate about 300 linear feet of fencing. Forty-seven inch field fence with galvanized Class 1 coating coupled with metal t-posts every 6-feet is the least expensive option resulting in a materials cost of about \$530. Volunteers can easily install

fences such as this, although the inexpensive fence has a relatively short lifespan (10-20 years).

Post Regulatory Signage

Access-control signs are an important part of "rule setting" in that they establish the types of activities prohibited in the Cemetery. As discussed in the following section entitled "Other Maintenance Issues," the Cemetery requires regulatory signage. These signs need to be installed at the path entrance and at the road entrance.

Lighting

Lighting is sometimes seen as reducing vandalism. There is no consensus on whether well-lit areas or "dark" locations are superior in terms of crime prevention. Cemeteries were not lighted historically. Thus, the introduction of lighting detracts from the historical integrity of the properties, changing the historic fabric. Another issue to be considered is that lighting is only useful if there is someone guarding the property, using the lighting to identify problems. This is not the case in most cemeteries, including Willowbrook Cemetery.

At the present time, there are two street lamps along Church Street.

We do not recommend that any additional lighting be installed.

Repair damage quickly and improve the appearance of the Cemetery

Clean, well-maintained cemeteries free of debris, free of evidence of past vandalism, and with attractively landscaped grounds are less at risk for vandalism. Consistent maintenance may serve as an "occupation proxy," giving the appearance that the cemetery is under steady surveillance by those concerned about keeping it safe. Conversely, cemeteries with much trash, evidence of damage, or poorly maintained grounds give the appearance of abandonment; if no one in society cares for the

property, why should the prospective vandal? Simply put, the appearance of abandonment breeds additional damage and vandalism. Thus, it is critical that the level of maintenance at Willowbrook Cemetery be immediately improved.

Offender-Focused Responses

Increase the Frequency of Police Patrols

Increasing the frequency with which police patrol the cemetery increases the likelihood that potential vandals will be seen. Even if law enforcement does not enter the grounds during routine patrols, the act of raking their spotlight through the cemetery from Church Street will give the appearance of visibility.

Use of Electronic, CCTV, or Photographic Monitoring

An option for hardening cemetery targets is the use of video and photographic imaging technologies. At the high end are systems such as VistaScape – an automated wide-area surveillance system that detects, tracks, and classifies objects in real time on a computer screen. If an object violates a policy set by the user, the software streams live video of the alarm event to the display and can also send wireless alerts to law enforcement personnel. Although an ideal solution, the cost makes such system beyond the reach of most cemeteries.

An alternative, however, is the Flashcam by Q-Star Technology (<http://www.qstartech.com>). This self-contained digital system is motion activated; a photograph is taken (a flash unit allows night photographs at 100 feet), and a customized recorded announcement is played. Units are solar powered, eliminating the need for electrical connections. Photographs are high resolution and time/date stamped. Units can be downloaded wirelessly. Although not inexpensive, they are among the most affordable solutions for cemeteries facing on-going vandalism and theft problems.

Though the initial financial outlay may be

significant, over the long term, these surveillance systems may be less expensive than security patrols. Nevertheless, we would only encourage this outlay if the Cemetery experiences significant problems in the future.

Provide Caretakers on the Cemetery Grounds

The continuous presence of a caretaker in a cemetery can deter potential intruders. At one time, this was achieved by resident superintendents who lived on the property in exchange for rent-free housing. While this is not possible at Willowbrook, several other options are possible.

Volunteers should be given readily identifiable t-shirts (distinctive color and logo) to wear when working in the Cemetery and this should be publicized. Volunteers should be scheduled to conduct periodic inspections of the Cemetery during the week and on weekends, throughout the year. Like police patrols, these visits should be unscheduled and occur at different times and on different days. These volunteers should not confront vandals or other problem makers, but should be eyes and ears, providing a presence in the cemetery and immediately reporting any suspicious activities.

Hold Offenders Accountable

Very few perpetrators of cemetery vandalism are identified and apprehended, and even fewer are prosecuted. Courts are generally lenient with offenders, and in most cases, the damage from an individual incident is seen as minor and does not appear to warrant harsh penalties. However, creative and well-publicized interventions to hold offenders accountable can have both a specific and a general deterrence effect. Restitution programs include a set of administrative and legal procedures to get money from offenders to pay for repair or replacement of damaged property. Publicizing the results of these efforts is important to maintain their deterrent effect.

The Association should ensure that the police department investigates vandalism and works to secure an arrest. If an arrest is made, representatives of the Association should be present in court, testify concerning the impact – and cost – of the damage, and ask for the maximum punishment possible. If no restitution is required by the court, the Association should consider civil court action to recover costs associated with professional repair of the damage.

Management Practices

Maintain an Inventory of Cemetery Stones and Their Condition

Vandalism often goes unreported because cemetery caregivers do not know what is present in the cemetery or its condition. Thus, vandalism can be overlooked as pre-existing damage. Only some of the stones in the cemetery have been photographed. An effort should be made to photograph all of the monuments and make these photographs accessible.

Volunteers must also become familiar with the stones in the cemetery and their condition. While it is obviously impossible to know each stone, volunteers may be assigned specific areas to become familiar with the stones and the condition of the stones in that one area. Inspections could then be conducted at least monthly, if not weekly.

Community-Focused Responses

Provide Rewards for Information Concerning Vandalism

Offender-focused responses require that vandals be identified and apprehended. Law enforcement investigations of vandalism incidents can be enhanced by high-quality information provided by community residents and even students from local schools. As seen with traditional "Crime Stoppers" programs, setting up telephone or internet-based tip-lines, offering rewards for information, and guaranteeing

anonymity encourages people to come forward with specific information. The most effective programs actively involve volunteers in collecting and synthesizing information for police, and in determining payout amounts in the event of apprehension.

Create “Cemetery Watch” Programs

Similar to “Neighborhood Watch” efforts, community residents can conduct citizen patrols of Cemetery property during evenings and weekends. Membership and regular participation in voluntary patrols increase when some form of prestige is offered to volunteers. Effective practices include:

- patrolling regularly, but at unpredictable times;
- ensuring volunteers have cell phones for prompt communication with police or other emergency services;
- engaging in passive surveillance only, and not interacting with potential vandals or intruders in any way; and
- publicizing activities and outcomes through school-based and local media outlets.

As an adjunct to this, residents in adjacent houses (such as those across from the Cemetery on Church Street and backing up on the Cemetery along Wigfall Street) should be especially encouraged to be attentive to problems in the cemetery. Unusual noise, lights, or activities should be sufficient to have neighbors call the police to report their concerns. The Association should seek to encourage the active participation of residents surrounding the cemetery in this area. Meetings should be held, preferably in the evening and preferably on the premises of the residents, to allow the Association to enlist the support of these residents.

In response to a specific problem or rash of incidents, Watch programs can produce short-

term reductions in vandalism. However, these programs are difficult to sustain, so the Association will likely need periodically to “rejuvenate” the program by holding new meetings and bringing in new participants.

The Association should also contact Boy and Girl Scout troops. Involving students in the care of cemeteries, and engaging them in ongoing, active projects will help establish a strong bond in the community.

Vandalism Records

We recommend that the city develop a form designed for the reporting of cemetery-specific vandalism (Figure 21). This form should include information such as what was damaged, with specific information concerning each stone, including the name and lot/plot; how the stone was damaged (toppled, broken into how many fragments, scratched, etc.); where is the stone now (was the broken stone gathered up for storage, if so, where is it stored); an estimate of when the damage occurred, including the last time the stone was known to be undamaged; an estimate – from a conservator – of the extent of the damage and cost for repair; a photograph of the damaged stone; when police were notified; when police responded and took a report, with a copy of the report attached; and the outcome of the police investigation.

Theft

There are no specific records of theft, but we know that it has occurred at Willowbrook, as evidenced by the number of plot fences missing gates. These gates are valued in antique stores and are almost impossible to recover once stolen (especially without photographs).

It is a simple maintenance step to use woven stainless steel wire to secure gates to their hinge posts. This allows the gates to open and close, but makes them considerably more difficult to lift off their hinges and steal. The cost to protect gates is less than \$20 each and the time involved is about

CEMETERY SECURITY



Chicora Foundation, Inc.
PO Box 8664
Columbia, SC 29202
803-787-6910

CEMETERY VANDALISM/DAMAGE
REPORT FORM

Cemetery: _____ Number of Stones/Objects Involved: _____ Are Human Remains Involved: ☐ yes ☐ no

Grave #: _____ Section #: _____ Lot #: _____

Date/Time Damage was First Observed: _____ am/pm Name of Observer: _____

Date Last Observed Undamaged: _____ am/pm Name of Observer: _____

Potential Witnesses: _____

Nature of Damage (attach photographs of damage): _____

Date Reported to Police: _____ Investigating Officer: _____

Police Incident No: _____ (Attach a legible copy of police report to this form)

Estimate of Damage (attach justification, conservation treatment proposals): \$ _____

Owners of Monuments Identified: ☐ yes ☐ no Owners Will Repair: ☐ yes ☐ no ☐ not certain

Follow Up with Police: _____

Repairs Undertaken by Cemetery (attach conservation treatment reports): _____

Total Cost of Repairs: \$ _____ Insurance Eligible: ☐ yes ☐ no Date Claim Submitted: _____

Date Claim Approved/Paid: _____ Amount of Claim Payment: \$ _____

Internal Evaluation for Future Prevention: _____

Form Completed By: _____ Date(s): _____

Figure 21. Example of a vandalism report recommended by Chicora.



Figure 22. Every fence without a gate is evidence of previous theft. The cemetery's ironwork is in jeopardy of additional losses.

15 minutes. This is something that the Association and its volunteers could easily accomplish. The NPS article, <https://home1.nps.gov/CRMJournal/CRM/v25n2.pdf> provides additional information. We recommend this action as an immediate priority.



Figure 23. Example of a gate protected with stainless steel cabling that has been painted to blend with the fence.

Other Concerns

One other issue we observed involves the Church property and how it may impact visitors to the cemetery.

During the assessment we identified an open storage room door (Figure 24). Areas such as this are good hiding places for violent criminals and should be avoided. A simple solution is for the Church to simply lock this door.

Recommendations

- The Association should review options to combat vandalism and determine which could be implemented to help harden the cemetery against vandalism.
- The pre-existing fence along the east property line should be cleared and replaced as needed.
- All of the homes bordering the cemetery should be contacted and asked to assist in reporting any unusual activities on the property.
- All plot gates must have stainless steel cabling used to attach the gate to the hinge post to reduce the potential for theft.
- The cemetery should begin using a form to identify and record evidence of vandalism.



Figure 24. Open storage room door at the south side of the cemetery. This should be secured to improve visitor safety.

Cemetery Fixtures and Furnishings

Plot Fences

Willowbrook is exceedingly fortunate to have such a large number and great variety of iron plot fences. These were often completely lost to metal drives, “improvement” campaigns, and theft. However, with this said, we must also impress on the Association that they have done nothing to help preserve or protect these resources and some fence parts are in the most deplorable condition we have ever observed. This issue must be given a very high priority.

Current Conditions

There are at least 22 cast iron or mild steel fences at Willowbrook Cemetery. Fences in good condition are those that, minimally, are painted or have little corrosion and that are structurally stable. Fences in fair condition are structural stable, but are missing parts and not painted. Finally, those listed in poor condition are unstable, unpainted, and missing many parts or even entire fence sections. Some of these conditions are illustrated in Figures 25, 26, and 27.

We estimate that of the fences present in the cemetery, nearly half should be characterized as being in poor condition. These fences will require more detailed assessments and treatment proposals with a focus not of restoration, but simple preservation. Thus, work will need to focus on issues such as removing fence parts from the soil; stabilizing line, corner, and gateposts; limiting water intrusion; and ensuring that the fences are painted.

The next priority will be those fences in fair condition, where treatment will most likely include limiting water intrusion, and painting.

These account for about two-fifths of the Cemetery’s fences.

Removal from Soil

The bottom rails of fences must never be allowed to be covered by soil (see Figure 26). Soil contact exacerbates corrosion and makes it impossible to paint that portion. The solution is to either remove the sod, grade the soil away from the fence, and replace the sod or, if this is not practical, then the entire fence must be raised above the soil. Clearly, both options are labor intensive, but they represent the only means of ensuring long-term preservation.

All fences receiving treatment should first be examined for open joints and other areas where water can penetrate through capillary action. These areas should be carefully caulked with Sikaflex 1a, an elastomeric caulk that is often used in fence repair. Under no circumstance should a silicon caulk be used.

Painting

Where fences evidence no remaining paint, they are excellent candidates for light brushing to remove loose corrosion followed by the application of Rust-Oleum Rust Reformer®. This product has been tested by the Canadian Conservation Institute, including exposure to very harsh salt spray and was one of their top three best performers (it is, today, the only such formulation still available). Rust Reformer® is a conversion process that stabilizes the corrosion products and serves as a primer. This product cures to a blue-black color.

The Rust Reformer® should be top coated with Rust-Oleum High Performance Protective

Enamel® in flat white followed by a final top coat of flat black 24 hours later. This is a quality assurance process since any areas missed by the flat white will immediately be identified by the undercoat of black Rust Reformer®. Similarly, any areas missed by the application of final topcoat of flat black will immediately be recognized by the underlying white paint.

Paint application should be by brush, producing initial dry coat of 1-2 mils (the wet build-up is typically twice this).

The use of rust conversion is not possible where there is existing paint, regardless of condition. Usually, chalking and fading of paint can be tolerated until there is flaking and/or spot corrosion. At that point, intervention is necessary.

Such fences should be cleaned to remove lichen, soil, dust, and grease. The next step is typically brushing of the fence to remove loose corrosion and flaking paint. Open joints and other areas where water can penetrate through capillary action should be carefully caulked with Sikaflex 1a.

The entire fence should then receive one coat of an alkyd primer, such as Rust Oleum Professional High Performance Metal Primer 7769. After this has cured, it should be followed by two top coats of flat black alkyd paint, such as Rust Oleum Professional High Performance Flat Black 7776402.

In all cases, we recommend flat paint, as the materials used to promote gloss in other paints tend to weather more poorly. Some fences in the cemetery have a gray paint. We assume there is some historic justification for this color and, if so, its continued use on those fences is acceptable.

Other Fence Issues

It is worthwhile to outline briefly a few additional issues critical in fence repair. These concerns should be kept in mind for all ironwork treatments at Willowbrook.

Whenever possible, painting should be by brush. If airless sprayers must be used, there will be much overspray, requiring much larger amounts of paint. In addition, all vegetation and all stones within the plot – and all immediately adjacent plots – must be fully wrapped in plastic to prevent damage from drift. The requirement for additional paint and the time required to wrap vegetation and monuments will significantly increase the cost of the work.

Welding is appropriate in some situations, but not all. Welding, if performed using continuous (not spot) welds that are ground smooth, is acceptable where little or no expansion or contraction of the iron is anticipated. Where there were originally slip joints, however, welding is inappropriate since it will create stresses that can cause additional damage. For these areas, it is necessary to infill the fabric and recreate slip joints that allow movement.

Where welding is appropriate, it must be of very high quality. Appropriate welding processes may include gas tungsten arc welding (GTAW) and shielded metal arc welding (SMAW). Success in repair of cast iron has been achieved in the past using a nickel welding electrode called a NiRod Ni-99. This rod allows elasticity that eliminates the cracking in the transition zone characteristic of low carbon steel electrodes. It should be combined with peening the weld upon completion, reducing surface stress during cooling. The GTAW process uses silicon-bronze wire and stainless steel wire. These are selected for their compatibility and ductility.

As previously mentioned, we do not typically encourage restoration. It is very costly and funnels money away from preservation activities that have a much greater impact on a much larger assemblage. Where parts are missing, it may be possible to identify substitute parts that are close approximations from sources such as Stewart Iron Works, King Metals, or Texas Iron Fence and Gate Company.

Another option for stability when entire



Figure 25. Examples of fence conditions. Upper left, gate no longer attached, post missing elements; upper right, gate and gate post no longer attached, iron jacking of granite foundation, missing elements; middle left, gate broken and elements missing; middle right, gate and gate post no longer attached, sections leaning; lower left, fence painted, but gate missing; lower right, fence painted, but gate no longer attached.



Figure 26. Examples of fence conditions. Upper left, cast and wrought fence in good condition, but it requires painting; upper right, mild steel fence in good condition, but it requires painting; middle left, mild steel fence with damaged gate and gate posts, that also requires paint; middle right, gate is missing, but fence is otherwise in fair to good condition; lower left, the fence bottom rail is buried in soil and requires resetting and painting; lower right, fence in good condition, but it requires paint.



Figure 27. Dismantled and poorly stored fences. Upper left, unsecured fence sections leaned against marble monuments; upper right, metal fence parts stacked on top of marble box tomb; middle left, unsecured fence section leaning against monument; middle right, fence sections stacked and partially covered by leaves and weeds; lower photograph, a gate from the Wates plot, essentially discarded.

sections are missing is to create a “ghost section” which is a simple fence outline (a top and bottom rail with occasional welded pickets) that is inserted in lieu of the missing section, simply to provide stability. Such an approach allows the beauty of the original ironwork to be readily visible without distraction.

Fence Parts

We identified fence parts lying on the ground piled in several locations in the cemetery. **This is simply begging for these irreplaceable items to be stolen.**

All such parts should be collected and stored for possible repair, replacement, or replication. They should not be ignored and allowed to be stolen or destroyed.

If there is not a secure location for storage, then the absolute minimum step is to use very heavy duty cabling to lock all of the pieces together in multiple locations. One example is the Brink's Commercial flexible braided steel cable with a heavy-duty vinyl protective wrap. This cable is cut resistant to 3,300 pounds. The goal is to harden the target by slowing down thieves and hopefully driving them to easier locations.

As with many other aspects of the historic fabric, lack of funds has resulted in significant deterioration. This has created a crisis. The cemetery must implement a preventative maintenance program and must fund repair of damages as they occur. If this is not done, much of the Willowbrook ironwork will not survive for another generation.

Amenities

Amenities are not common at Willowbrook, but include two benches and a birdbath. The problem with amenities is that they are typically installed by families, but never maintained. The result is that there are yet additional maintenance issues – and liabilities – placed on caregivers.

One of the benches is a beautiful, early twentieth century example of an iron bench that has survived neglect (and avoided being stolen). However, it does require the same attention that we recommend for fences and gates. It should be attached to the adjacent fence using stainless steel cabling and it should be placed on a maintenance schedule for painting.

The other bench is a typical granite specimen on the Thurmond plot. It, however, is unstable and poses a threat to the public. It requires either resetting or removal.



Figure 28. Benches in Willowbrook also require maintenance. The iron bench at the top requires securing to the fence or tree, as well as cleaning and painting. The granite bench below requires resetting to make it stable and safe.

Since there are no rules, there is currently no prohibitions or regulations concerning amenities. The owner (once established) should consider prohibiting the addition of amenities to lots. In addition to the issue of long-term maintenance, many amenities are not historically appropriate.

In particular, we discourage future addition of urns. Monument companies often sell urns to clients who are unaware of the upkeep. As a result, the urns often hold water, breed mosquitoes, collect trash, are turned upside down, or are just ignored. They are rarely repaired or replaced when broken. They are likely not used since most floral arrangements today come in their own plastic container, rendering the urns and vases redundant.

Introduction of Additional Memorials

Various groups may wish to introduce new markers or memorials into the cemetery or families may wish to replace existing markers. In general, since the cemetery is listed on the National Register of Historic Places, caregivers should be very circumspect in allowing modern additions to the landscape or modifications of the existing historic fabric. It is very important that the historic context and appearance of the cemetery be carefully maintained.

Replacement Monuments

All people deserve the dignity of ensuring their grave is marked and there are times when a marker is so eroded or difficult to read that it no longer serves as an appropriate memorial.

The original marker should never be removed. Nor should it be recarved. Instead, the original marker should be left in place and a new marker laid at its foot as a lawn marker (a horizontal plaque). The new marker may be bronze or granite as both exhibit considerable longevity. By allowing only lawn markers, the three-dimensional landscape of the cemetery is

maintained, while the grave continues to be memorialized.

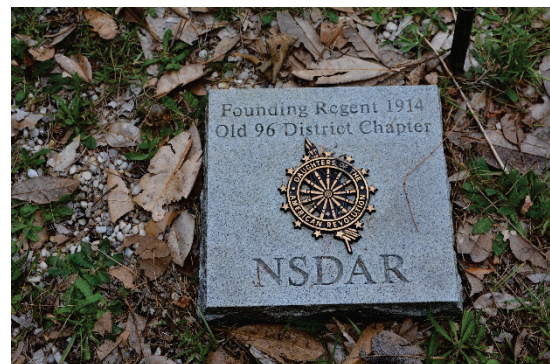


Figure 29. Proper way of adding plaques and emblems to existing graves.

The new marker should contain only what is (or was) on the original marker, with the addition in small letters that it is a replacement marker erected in a particular year. This helps ensure that it is made clear that it is a recent introduction into the historic cemetery.

This approach has been used by several organizations providing additional markings at graves. This is a good approach since, as noted above, it maintains the three dimensional aspect of the cemetery. In addition, it does not damage the historic monument by the addition of modern emblems.

Recommendations

- Plot fences are in critical need of being secured to prevent theft.
- Plot fences must be removed from the soil.
- Plot fences must be placed on a schedule for painting and other repair.
- Caregivers should not allow the introduction of additional benches, urns, or vases in the cemetery.
- Caregivers should also be careful to prevent other introductions that are out of character with the historic cemetery such as grave decorations.
- The introduction of new memorials must be very carefully monitored and limited. New monuments should be allowed only when the historic monument is no longer legible. In such cases, the original monument must remain and a new flush marker with the precise language of the original marker erected as a flush-to-ground lawn marker.

Landscape Issues

Staffing

It is our understanding that currently the cemetery receives mowing and some trimming perhaps once a month for about a 10-month growing season. This is performed by an individual who charges about \$500 per mowing and the work requires about three days. That is about \$125 per acre or \$167 per day.

Other landscape work in the past has included tree removal with either Ted Price or Ralph Robinson hired on a per job basis. Tree work is conducted only when necessary because of storm damage.

At least in the case of the mowing, the Association is receiving very inexpensive services. We have previously suggested that if we were budgeting for such work we would allot \$350 per acre, or a total of \$1,400 – not \$500.

However, costs are never the only consideration, nor should they be, especially when caregivers have a fiduciary and ethical responsibility to past and future generations. For example, it is estimated that careful, appropriate mowing of a cemetery with 3-dimensional monuments requires six-times the labor than modern lawn park cemeteries (Klupar 1962:239; Llewellyn 1998:100). In addition, the Association should consider the liability of employing individuals without general liability, workers compensation, and legally mandated OSHA training.

As revealed by these discussions, it is critical that the landscape services be *significantly* improved, even if their frequency stays about monthly (which it should not).

What is Appropriate Maintenance?

There are numerous documents that can assist in answering this question, but in general “care and maintenance” should include keeping the cemetery, its plots and graves, landscape, roads, paths, fences, vaults, and other features well cared for and in a dignified condition. This will include mowing the grass at reasonable intervals; raking and cleaning the grave spaces and adjacent areas; pruning of shrubs and trees; suppression of weeds and exotic flora; and maintenance, upkeep, and repair of drains, water lines, roads, buildings, and other improvements. It will include leveling of the grounds, sodding or planting grass over graves, reasonable care of the grass and other ground cover, removal of debris, edging, and care of pavement.

Care and maintenance will also include repair or restoration of improvements because of wear, deterioration, accident, damage, or destruction.

Virtually of these activities are good practice, including weed control, tree trimming, pruning, seasonal cleanup, maintaining the roads, conducting section inspections, survey of monuments for maintenance needs, maintenance of shrub beds, maintaining section signs, maintaining water lines, rehabilitation of barren areas, raking, resetting stones as needed, inspecting and repairing fences, watering newly planted areas, sodding as necessary, identification of trees for removal, removal of flowers and grave decorations, removal of wild growth, and inspection and cleaning of catch basins (see, for example, Klupar 1962:226-228).

Cemetery Maintenance Inspection Form

Cemetery: _____ Date: _____ Inspected By: _____

Elements	Issues	Good	Requires Attention	Not Applicable	Comments/Location
LAWNS	General Appearance				
	Mowing Height				
	Water/Moisture				
	Edging/Trimming				
	Pest/Disease Control				
	Weed Control				
	Fertilization				
	Other				
BEDDING PLANTS & PLANTERS	Plant condition				
	Water/Moisture				
	Pest/Disease Control				
	Cultivation				
	Staking				
	Dead Heading				
	Trimming				
	Fertilizing				
	Weed Control				
	Edging				
PERENNIALS & GRASSES	Plant Condition				
	Water/Moisture				
	Pest/Disease Control				
	Cultivation				
	Staking				
	Dead Heading				
	Trimming				
	Fertilizing				
	Weed Control				
	Edging				
SHRUBS & GROUNDCOVERS	General Condition				
	Water/Moisture				
	Pest/Disease Control				
	Pruning				
	Shearing				
	Trimming				
	Weed Control				
	Cultivation				
	Fertilizing				
	Mulching				
TREES	General Condition				
	Water/Moisture				
	Pest/Disease Control				
	Edging Wells				
	Mulching				
	Pruning				
	Repair				
	Hazards				
	Plant Support				
	Stakes/Wires/Anchors				
IRRIGATION	Base Damage/Cirdling				
	Fertilization				
	Other				
	Heads/Risers				
	Pressure				
	Coverage				
	Controller Settings				
	Leaks				
	Other				
	DRAINS/DITCHES	Debris			
Pollution					
Other					
Damage					
Dirty					
FURNISHINGS & FIXTURES					
OTHER					

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Figure 30. Form that can be used by the Association as an independent evaluation of landscape conditions.

The importance of maintenance was clearly stated by West, “one thing is certain, the cemetery must be maintained in a proper manner or public confidence will suffer” (West 1917:26).

To help the Association evaluate the effectiveness of landscape maintenance at Willowbrook, we are including Figure 30, a two-page form that itemizes a number of important landscape activities. This list should be used monthly, after the cemetery has been mowed, to evaluate the effectiveness of the service being provided.

Professional Training

Sadly, professional training in the landscape industry, at least among the public, is undervalued. This contributes to rapid turnover and inappropriate maintenance activities.

In 2005, the Associated Landscape Contractors of America (ALCA) and the Professional Lawn Care Association of America (PLCAA) merged to form the Professional Landcare Network (PLANET), which is today the National Association of Landscape Professionals. This organization offers seven certification programs.

The first is the Certified Landscape Technician – Exterior. The exam for this certification is a hands-on field test and candidates specialize in one of five areas: Softscape Installation, Hardscape Installation, Turf Maintenance, Ornamental Maintenance, or Irrigation.

The second is Certified Lawncare Technician. Certification in this area demonstrates a mastery of weed, insect and disease identification/control, as well as diagnosis of common turfgrass problems. The material supports Integrated Pest Management concepts and pesticide safety – significantly reducing the Association’s liability for operations.

The third is Certified Horticultural Technician. This certification emphasizes tree and shrub maintenance procedures with candidates

concentrating on landscape trees and ornamental woody plant physiology, health care management, and establishment.

The University of Georgia has developed several exceptional training programs readily available either on-line or through DVDs. One is the SuperCrew series that provides professional training developed in cooperation with industry leaders and endorsed by professional organizations. Topics range from “Being Safe with Grounds Equipment” to “Pruning Ornamentals.”

The University of Georgia Center for Urban Agriculture also sponsors two certification programs of its own. One is the Georgia Certified Landscape Professional and the other is the Georgia Certified Plant Professional. Both include a testing program that certifies those in the landscape profession who have mastered a thorough knowledge and understanding of job skills. The program is endorsed by the Georgia Green Industry Association, the Georgia Turfgrass Association, the Metro Atlanta Landscape and Turf Association and is officially recognized by the Georgia Department of Agriculture. Each program costs \$165.

The certification test consists of four written components and eight hands-on components. Applicants are provided a 400+ page printed study manual and access to an internet study site developed by the University of Georgia. Additional information is available at <https://ugaurbanag.com/certification/>.

In addition to these training opportunities, the Georgia Center for Urban Agriculture has also developed a computer program known as Hort Management. This program, costing only \$100, provides estimates for landscape maintenance costs, assisting the user in estimating material, labor, and equipment costs. While it provides a bid price, it also indicates a break-even price that would help the Association better determine the effectiveness of its landscape management activities. It provides industry averages for time/task data and costs are used throughout the

application. Information is available at <http://hort.caes.uga.edu/extension/educational-programs-and-resources/landscape-software.html>.

Given the large number of trees on the cemetery, the importance of these trees to the vistas and historic landscape, and the potential damage that improper tree care can create, we recommend that the Association hire only individuals who are members of the International Society of Arboriculture (ISA) and have at least some tree experience.

Certified arborists have a minimum of three years' experience in some aspect of tree care and have passed an exam developed by an international panel of experts. The exam extensively covers every aspect of tree care and the individuals must have an acceptable level of knowledge in all areas of arboriculture.

Table 2 provides a list of six ISA Certified Arborists within 25 miles of Edgefield. Thus, there

Regardless, it becomes impossible to manage vegetation in the cemetery if there is no data on the condition of the soils.

It is good practice to test soils every three to five years. To begin this process, we have conducted soil tests on two samples, representing the north and south halves of the cemetery. Our analyses were conducted by A&L Eastern Laboratories. The results of these tests are provided in Figure 31.

Soils in both sections have a high cation exchange capacity (7.6 to 7.8 meg/100g). The cation exchange capacity is the maximum quantity of total cations, of any class, that a soil is capable of holding, at a given pH value, available for exchange with the soil solution. It is used as a measure of fertility and nutrient retention capacity, and in general, the higher the number, the higher the soil fertility. The cation exchange capacity can be improved with the introduction of humus and organic matter. The results of this study show that the tested soils have high levels of organic material,

Table 2.
ISA Certified Arborists in the Edgefield vicinity

Name	Company (if listed)	City	Phone	Email	Credentials
Charles Rice	O.A.K. Services	Aiken, SC	(855)625-7378	Sales@OAKServices.com	ISA Certified Arborist, Tree Risk
Barry Smith	Arborist Services of Evans GA	Evans, GA	(706) 564 5794	barrysmith@aol.com	ISA Certified Arborist
Justin Lee	Bartlett Tree Experts	Augusta, GA	(706)840-1061	jlee@bartlett.com	ISA Certified Arborist; Tree Risk
Jay Bradley	Bradley Tree Professionals	Martinez, GA	(919)273-1904	Bradleytreepros@gmail.com	ISA Certified Arborist
Jesse Pickens	Big Dog	Augusta, GA	(305)216-2962	jpickens44@gmail.com	ISA Certified Arborist
Sidney Mullens		Martinez, GA	706-360-2414	smullis@uga.edu	ISA Certified Arborist

ISA Certified Arborist - trained and knowledgeable in all aspects of arboriculture; ANSI Accredited Personnel/Certificat 0847

ISA Tree Risk Assessment Qualification - arborist trained in using the methodologies outlined in the ISA Best Management Practices for Tree Risk Assessment

is ample expertise for the Association to call on when needed.

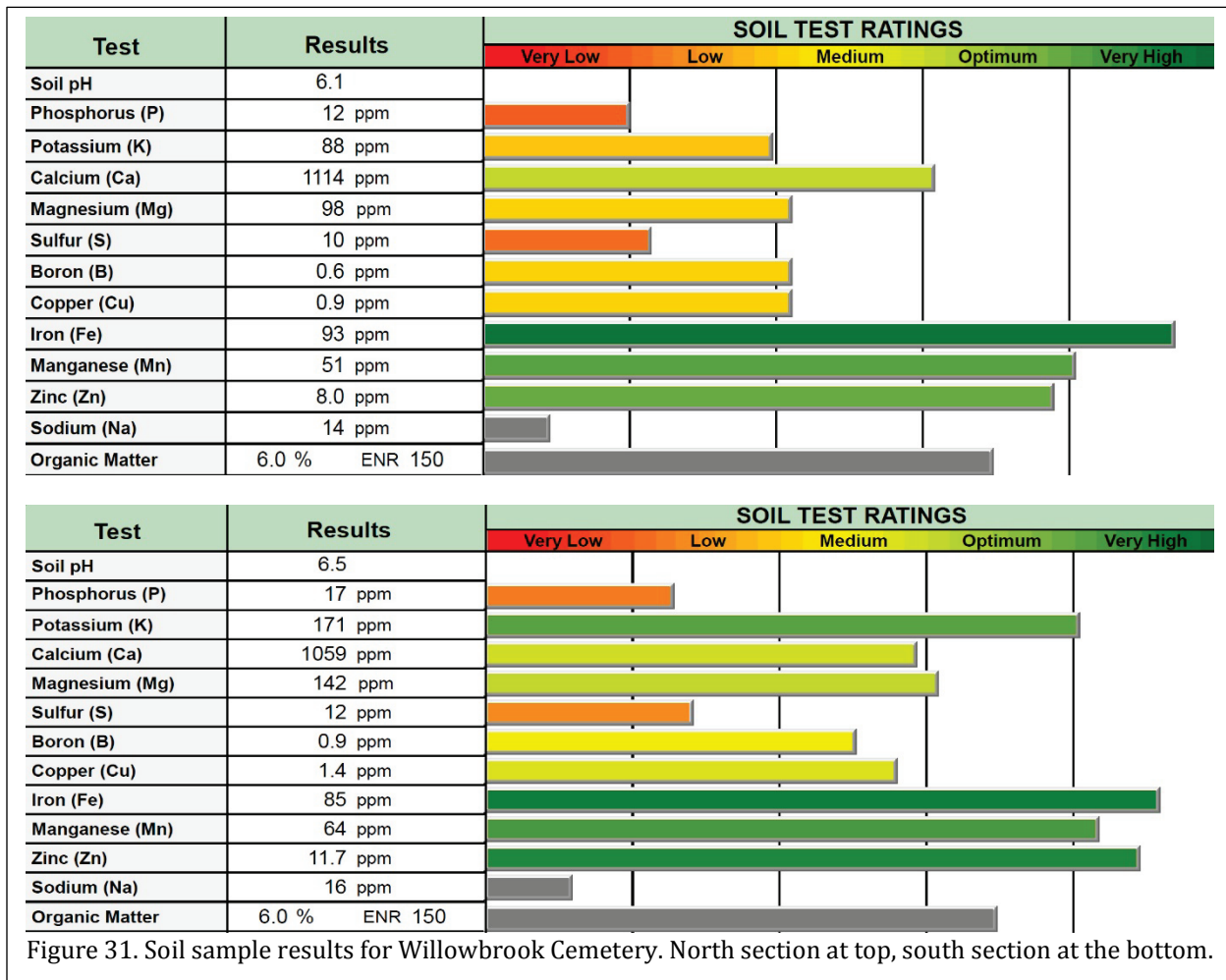
are able to retain nutrients and thus are considered relatively fertile.

Cemetery Soil

Willowbrook Cemetery reports that no soil sampling for either turf or trees has been conducted. This certainly cannot be a result of cost, since routine testing by Clemson University is no more than \$6 per test <https://www.clemson.edu/public/regulatory/ag-srvclab/soil-testing/index.html>.

The organic matter is high in these loamy soils and are not in need of soil amendments.

Soil pH ranges from 6.1 to 6.5, figures that are very slightly acidic. The optimum plant growth range is between 6.5 and 7.0 for most plants, although centipede prefers slightly more acidic



soils, in the range of 5.0 to 5.5. Nevertheless, we do not recommend pH adjustment at this time.

Phosphorus (P) levels are low or very low. Phosphorus is essential for photosynthesis, seed and fruit production, plant energy production, and cell division. Adequate supplies will promote root growth and formation, greater flowering and seed production, better growth in cold temperatures, and efficient water use. Soil compaction and a lack of aeration – both problems at Willowbrook – will reduce phosphorus levels.

Potassium (K) is also essential in photosynthesis, plant growth, and effective

response to drought stress. Levels are very low in the north section, but good in the south section. By reducing compaction and improving aeration, potassium levels are improved.

Sodium (Na) is not a plant nutrient and therefore is not necessary for plant growth. High levels of sodium are detrimental to soil structure, soil permeability, and plant growth. Thus, the very low levels at Willowbrook are good.

Calcium (Ca) and magnesium (Mg) levels range from medium to high. These are satisfactory. Sulfur (S) levels, however, are low. Described as a secondary plant nutrient because it is generally not as deficient as nitrogen, phosphorus, and

potassium, it is as important as any of the major nutrients. In our region, it is most common affected by leaching.

Micronutrients include boron, copper, iron, manganese, and zinc. All of these are identified as very high to medium at Willowbrook.

While these test results suggest that supplemental phosphorus (P) and potassium (K) might be beneficial, the dominant grass is centipede and it requires relatively low levels of nutrients. Consequently, the initial fertilizer recommendation for the entire cemetery is the application of 2 pounds of 21-0-0 per 1,000 square feet or about 87 pounds for the entire cemetery, at a cost of approximately \$75.

If or when in the future fertilizers are to be applied, slow release organic fertilizers are preferable to commercial inorganic fertilizers since they have significantly lower salt indices. An excellent source explaining the differences between organic and inorganic fertilizers is <http://www.cmg.colostate.edu/Gardennotes/234.pdf>. The publication at <https://www.carolinafarmstewards.org/wp-content/uploads/2012/12/3-McLaurin-Reeves-How-to-Convert-an-Inorganic-Fertilizer-Recommendation-Into-an-Organic-One.pdf> provides information on converting traditional inorganic fertilizer recommendations to safer organic recipes.

For this specific recommendation, an alternative to the use of ammonium sulfate is the use of organic blood meal. There are a variety of on-line sources. One identifies Earthworks 13-1-0 blood meal in 50 pound packages for about \$80. The application amount will require 3 pounds per 1,000 square feet, or a total of about 130 pounds. While slightly more expensive (as organic materials tend to be), the blood meal does supplement the phosphorus.

After a year, the soils should be retested and a decision made on whether to address other nutrient deficiencies.

Sometimes there is the concern that application of fertilizer, especially nitrogen, will only make the grass (or weeds) grow more quickly and require more frequent mowing. To some degree, this is true, but it will also help strengthen the grass and encourage it cover bare areas and overtake weed production.

Consideration should be given to application of a pre-emergent herbicide also to help fight the weeds.

Cemetery Trees

Selection Issues

Cemeteries, in general, have historically been dominated by large deciduous trees, although evergreens such as cedar are also very common. The trees provide a distinctly inviting image for visitors and passersby. They also provide some visual separation from adjacent buildings – especially in cluttered urban environments. They provide shade, reduce stormwater runoff, stabilize soil, and reduce evaporative water loss.

Ideally the trees selected should be historically appropriate. At Willowbrook, we have no information regarding the planting or any early landscaping that may have been conducted. Today, the plantings are a mix of recent introductions and trees that occur naturally. Therefore, we have to select “generic” trees that are appropriate in most situations.

Some trees, whether historically appropriate or not, should probably be avoided since they pose significant maintenance issues. These include trees that produce dense shade (causing problems with the turfgrass); trees that exhibit suckers or surface roots (also causing turfgrass problems, as well as disrupting monuments); trees that drop large quantities of leaves, seeds, or sap (posing additional maintenance problems); and trees that are especially weak or vulnerable to wind or ice damage (threatening monuments).

Table 3.
Choices among historic trees

Common Name	Scientific Name	Origin	Cultivation		Size (HxS)	Litter	Breakage	Roots	Notes
			Zone	Light					
American Ash	<i>Fraxinus americana</i>	Native: 1724	3-9A	PS-FS	M	50-80x40-60	Moderate	Weak	Not tolerant of urban soils or heavy clay. Threatened by emerald ash borer.
Green Ash	<i>Fraxinus pennsylvanica</i>	Native	3-9A	FS	H	60-70x45-50	Moderate	Weak	Threatened by emerald ash borer. Michael Dirr (1998) recommends "Valley Forge," "New Harmony," and "Princeton" as respectably disease tolerant.
American Elm	<i>Ulmus americana</i>	Native: 1670	2-9	PS-FS	M	70-90x50-70	Moderate	Weak	Good specimen tree; typically more formal landscape.
American Linden	<i>Tilia americana</i>	Native: 1752	3-8	PS-FS	M	50-80x35-80	Moderate	Weak	Good specimen tree; typically more formal landscape.
Arborvitae	<i>Thuja occidentalis</i>	Native: 1536	2-7	PS-FS	M	25-40x10-12	None	Resistant	Good screen or hedge plant; not commonly used as a specimen plant.
Eastern Red Cedar	<i>Juniperus virginiana</i>	Native: 1664	2-9	PS-FS	H	40-50x10-20	None	Weak	Planted for "perfect columnar growth" and traditional cemetery tree.
Post Oak	<i>Quercus stellata</i>	Native	6-9A	FS	H	40-50x35-50	Moderate	Resistant	Not widely available in nurseries
Red Oak	<i>Quercus rubra</i>	Native: 1783	5-8A	FS	H	60-70x50-60	Moderate	Weak	Not as popular as elm and maple.
Sugar Maple	<i>Acer saccharum</i>	Native: 1735	3-8A	S-FS	M	50-80x35-80	None	Resistant	Excellent colors through all seasons; frequently used for ornamental plantings.
Weeping Willow	<i>Salix babylonica</i>	Exotic: 1730	2-9A	PS-FS	H	45-70x45-70	Moderate	Weak	Roots are especially aggressive.
White Oak	<i>Quercus alba</i>	Native: 1724	3B-8	PS-FS	M	60-100x60-80	Moderate	Resistant	A northern oak; was a favored tree, however.
River Birch	<i>Betula nigra</i>	Native	4-9A	PS-FS	M	40-50x25-30	None	Resistant	Requires early pruning to prevent drooping.
Crepe Myrtle	<i>Lagerstroemia indica</i>	Exotic	7-9A	FS	H	10-30x15-35	None	Resistant	Many cultivars; some mildew resistant
Southern Magnolia	<i>Magnolia grandiflora</i>	Native	7-10A	PS-FS	M	60-80x30-40	Heavy	Resistant	Number of cultivars are available

Obviously, there is no such thing as a perfect tree. Many of the historically appropriate species have significant problems as shown in Table 3. At least some of these problems, however, can be overcome through judicious placement, appropriate planning, and careful early pruning.

The magnolia is especially abundant in the cemetery today. These trees are producing large amounts of litter, including both leaves and seed pods. The latter are especially problematic since they pose tripping/slipping hazards. Historically the dense foliage and low limbs hid the litter. Unfortunately, these limbs tend to be removed today for security reasons and this, in turn, exposes the litter. If magnolias are to be incorporated into the cemetery landscape then it is essential that the debris be periodically raked and removed. We generally do not encourage the replanting of magnolias since they do require considerable maintenance.

Cedars, arborvitae, and crepe myrtles are better choices for planting today.

Replanting

Trees should be replanted as older ones are removed and a general effort should be made to plan for future tree replacement, perhaps using a mix of fast-growing but short-lived trees intermixed with slow-growing but long-lived trees to create a planned appearance.

It is also appropriate to plant replacement trees in anticipation of their need, allowing them an opportunity to become established before the diseased or damaged tree is removed.

As just mentioned, special consideration should be given to cedars, arborvitae, and crepe myrtles, depending on the space available.

Planting Issues

Locations chosen for planting should not interfere with gravestones, curbing, or fences. Issues of security should also be considered and the use of small trees that obscure eye level views

should generally be limited or avoided.

Research is suggesting that trees, especially older mature trees, improve in health when turfgrass is removed under the branch spread and mulch is applied at a depth not exceeding 3 to 4-inches. Fine-textured mulches prevent evaporative water loss better than coarse-textured mulches. This is a practice that could be productively employed at the Willowbrook Cemetery, especially under the magnolias. Staff should be closely supervised to prevent over mulching of vegetation – it must never be applied more deeply than 4-inches and must never be mounded against the tree trunk.

All replacement trees or new plantings should be of at least 1-inch caliper and meet the minimum requirements of the American Nursery and Landscape Association's American Standard for Nursery Stock (ANSI Z60.1-2004). This is available at http://www.nurserycropscience.info/cultural-practices/pruning/other-references/american-nursery-landscape-association-standards-2004.pdf/at_download/file.

Once planted, young trees must be well tended. This usually includes ensuring they have water and are protected from animal and mower damage. Some also require early pruning to ensure they develop properly.

There are a variety of water bags for young trees, including the Treegator (<http://www.treegator.com>). In fact, bags are now readily available in big box stores.

Young tree trunks can be protected from trimmer and animal damage using rigid tree guards (<https://www.amleo.com/leonard-rigid-plastic-mesh-tree-guards-set-of-5/p/VP-BG/>).

Tree Maintenance

Maintenance involves at least four basic issues: watering, fertilization, pruning, and pest control.

Watering

The cemetery has neither the staff nor water source to water trees, relying instead on rainfall. While this is typically acceptable, the landscape plan should include provisions for deep-root water during periods of severe drought (assuming this is permissible). This is a critical step necessary to protect the historic landscape fabric of the cemeteries. Using a root feeder without fertilizer, it is possible to apply water 12-inches below the surface. This approach can not only be used during severe drought, but also during extended periods of dry weather during the winter (as long as the temperatures are above freezing).

Fertilization

The Association also reports that no tree fertilization is conducted, presumably because of the funds required. The trees in Willowbrook Cemetery are vital components of the landscape. They represent part of the historic fabric and steps must be taken to protect that aspect of the landscape and vista.

Fertilization should be conducted based on need as excess fertilization can damage trees; nevertheless, the ISA position is that, "tree fertilization should be done in accordance with ANSI A300 standards" (Lilly 2001:47). These ANSI A300 (Part 2)-2011 standards represent the standard of care of the industry. This is why more proactive involvement by certified arborists in cemetery maintenance is essential.

Fertilization is typically accomplished through deep root fertilization – an approach where the liquid fertilizer is injected into the soil with a probe, usually 6 to 12-inches below the surface at a spacing of about 2 to 3 feet. This process not only provides



Figure 32. Tree damage from May 2018. Top and middle photographs shows damaged stones still not repaired. Lower photo shows the tree, still in the cemetery.

fertilization, but also some aeration of the soil. An alternative approach uses a drill to excavate holes

in a similar pattern which are then filled with a granular fertilizer. Either is acceptable. The ANSI 300 standards allow foliar applications, injections, or implants only when soil application is impractical or ineffective.

It is best to fertilize trees when they are actively growing and have available water to help absorb nutrients. In Edgefield, this is typically from the spring, after new leaves emerge, through mid-season. Fertilizer should not be applied late in the season, during the winter, or during periods of drought.

In a cemetery setting organic fertilizers should be the primary choice. These materials, such as cottonseed meal and bone meal, have much lower salt indices than inorganic fertilizers – resulting in reduced salt uptake by monuments. This is important since salts cause staining, spalling, and deterioration of marbles, sandstones, brick, and even granites. In addition, organic fertilizers have a slower release rate and are easy on the root systems.

Pruning and Hazardous Trees

The overall health and condition of many trees at Willowbrook Cemetery is poor and it appears that little attention has been directed to pruning or the removal of hazardous or sickly trees. The Association admits this, indicating that trees are only dealt with because of storm damage.

One example of this is a large hardwood that fell during the May 2018 storm (see Figure 13 for a view of the damage at the time). The problem with this deferred maintenance program is that when something does occur, it is likely to create extensive damage. In this case, Figure 32 shows the damage that is still present, including six toppled or broken stones.

As this damage was caused by the failure of the Association to evaluate the health and condition of its trees, it seems reasonable that the Association should be held responsible for the necessary repairs.

Yet over three months after the event, not only are the stones still toppled and broken, but a very significant portion of the tree is still in the cemetery. There is no excuse for this delay in dealing with this event.

No one is dealing with trees – most especially hazardous trees – in a proactive manner. Hazardous trees are those that can reasonably be expected to pose a hazard to monuments and/or the public in the cemetery. This is not an ISA risk or hazard assessment using the Matheny and Clark system or some similar rating program. In fact, most of the trees identified as potential hazards are dead, dying, or badly storm damaged. Several examples are provided in Figure 33.

During the removal of these dead or dying trees, their stumps in a cemetery should be removed as close to the ground as possible. Once cut to 1-2 inches above grade, stumps should be allowed to decay naturally. No chemical additives should be used to hasten decay, although it is acceptable to paint an herbicide on the stump if it is a tree that will promote suckers. Stump grinders should *rarely* be used in the cemetery – there is simply too great a risk of damage to graves. Whatever equipment was used to remove a portion of the storm-damaged tree resulted in leaving deep ruts in the cemetery. When vaults do not protect graves, this can result in significant damage.

Virtually all of the trees in the cemetery, having been ignored for so long, now require pruning for either thinning or cleaning. Thinning is a technique of pruning that removes selected branches to increase light and air movement through the crown. This also decreases weight on heavy branches. The natural shape of the tree is retained and its overall health is improved.

In cleaning, the pruning removes branches that are dead, dying, diseased, crowded, broken, or otherwise defective. This includes narrow crotches.



Figure 33. Hazardous trees that should be removed and replaced. The tree at the top is essentially dead. The tree below has been severely topped.



Figure 34. Tree problems at Willowbrook. Upper photo shows cedars with abundant dead wood that requires pruning. Lower photo shows improper pruning leaving stubs.



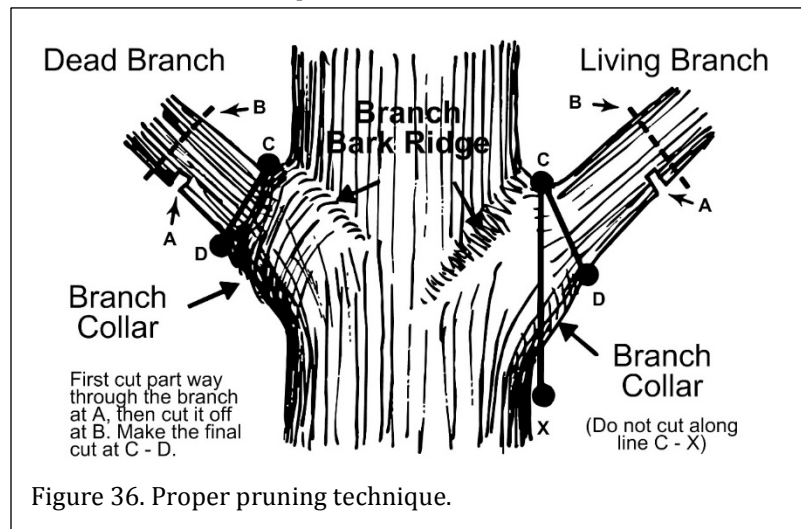
Figure 35. More examples of improper pruning showing torn branches and stubs.

The pruning that has occurred is incorrect and has resulted in damage to the trees. Trees must be pruned in such a manner as to preserve the natural character of the plant and in accordance with ANSI A300 (Part 1) - 2017 standards. This often will require the use of an ISA Certified Arborist with specialized knowledge and training. The ISA Certified Tree Worker/Climber Specialist has knowledge in the major aspects involved in tree care including pruning, removal, cabling and safety. These are critical skills when working among historic monuments.

In pruning, branches should always be cut just beyond the branch collar (an extension of the main stem) and not flush with the trunk. Large branches should be removed with three cuts to prevent tearing of the bark that can weaken the branch and lead to disease.

We have previously provided a list of certified arborists within 25 miles of the cemetery (Table 2, page 54). The Association should require that any tree work conducted in the cemetery be done by one of these firms – or a firm that includes an ISA Certified Arborist. The cemetery trees and surrounding monuments are too valuable to trust to an individual without training, experience, and understanding of tree anatomy.

There are examples of established trees



interfering with monuments and fences.

In the case of tree vs. monument, the course of action depends on the size and value of the tree. In the case of small trees or trees of limited landscape value, the tree can be sacrificed and, if appropriate, a new tree planted elsewhere. Where the tree is large and/or of great value, there are two options. It may be that the monument can be moved slightly on the grave to avoid the tree. In other cases, it may be prudent to wait for the time when the tree declines in health and requires removal.

In the case of tree vs. fence, the best practice is usually to remove the tree, if that can be done safely. Ironwork is of very great value and measures should be taken to ensure its long-term preservation and protection from damage. In such cases only a ISA Certified Arborist should be retained to remove the tree. Generally this will require that it is taken down in sections. It may also be impossible to remove totally the ironwork from the tree growth, in which case the stump should be allowed to rot until the fence and wood can be safely separated.

Trees should be inspected for potential threats to monuments, as well as general health. Ideally these inspections should be made yearly and after any storm where the winds exceed 55 mph. They should be pruned to remove potentially hazardous dead wood on a yearly basis, but safe pruning every 5 years by a certified arborist is acceptable. Rigging and/or a crane must be used to minimize the potential for damage to stones or the landscape. Under no circumstances are tree climbers (hooks, spikes, gaffs) to be worn while ascending, descending, or working in trees to be pruned.

Nevertheless, most of the issues we observed involved new tree growth that has not been removed as part of routine grounds maintenance.



Figure 37. Tree problems. Upper left photograph shows trash vegetation growing up between a brick wall and iron fence. Upper right photograph shows a scrub tree immediately adjacent to a brick box tomb. Middle left photograph shows a bird-planted cedar growing up in a child's box tomb. Middle right photograph shows a trash tree growing up in a cradle grave. Lower left photograph shows scrub oak at the base of an arborvitae. Lower right photograph shows a tree that has been allowed to grow too close to an iron fence and is now impacting the stability of the fence.

If these scrub trees are left unattended, they will become problems five-ten-fifteen years from now. It is essential that landscape activities include crewmembers with hand clippers to remove these weedy plants.

Pest Control

During this visit, we observed no obvious evidence of pests but South Carolina is at risk for a great many problems, including the Emerald Ash Borer, Sudden Oak Death (a fungus), Laurel Wilt Disease, Sycamore Anthracnose, and the Woolly Adelgid. Given the importance of the trees to the cemetery landscape, it is of critical importance that the Willowbrook Cemetery trees be very carefully inspected by a Certified Arborist on at least an annual basis.

Shrubs

Historically, most town cemeteries were not planted in shrubs and those that are present were, presumably, planted by lot owners as the landscape began to transform into a more rural park. Regardless, these shrubs were usually planted by families long dead or removed from the area. As a result, the maintenance of these shrubs falls back on the caregivers today.

Selection and Planting

Most shrubs appear to be individual specimens, probably anticipated to serve as accents. Shrubs identified in the cemetery include primarily boxwood, with fewer numbers of arborvitae and holly. English ivy was also observed, although primarily climbing trees in the shady areas that received little maintenance.

The number and placement of plantings is not particularly effective overall since they lack a unifying or cohesive theme. The one location where there was, at some point, something approaching a planned landscape are four arborvitae in the corners of a plot. Here, however, the plantings have grown so large that they have been mistreated by inappropriate pruning, largely ruining the effect.

Elsewhere, the unifying theme appears to be years of neglect, resulting in some of the shrubs being invaded by other vegetation, such as small trees and vines, or in the shrub dying. In the latter case, some of these remain in the cemetery, providing mute testimony to neglect.

As with trees, when shrubs require replacement, they should generally be replaced with like material, especially if they represent plants traditionally used in cemetery settings. If planting lists cannot be located for the cemetery, plants such as forsythia, hydrangea, lilac, and memorial rose (in addition to those identified) are all known to be period appropriate.

Fertilization

As with trees, the best indication of the need for fertilization is a soil test, which should be performed at least every three to five years. While some shrubs, such as boxwood, provide an indication of deficiency through the yellowing of lower leaves, such evidence can be missed and does not indicate the extent of the problem.

Where fertilization is necessary most shrubs, because of their shallow root systems, respond adequately to broadcasting the appropriate organic fertilizer around the base of the plant, typically at the drip line.

Most shrubs should be fertilized when they are actively growing and have available water to help absorb nutrients. Broad-leaved evergreens, such as boxwood, are best fertilized in the winter or spring. Summer or fall fertilization of these plants may induce late season growth that is highly susceptible to winter injury.

Pruning

It is again in the category of pruning maintenance that we see significant problems at almost all cemeteries. The two most obvious problems are inappropriate or technically incorrect pruning and the failure to remove weedy plants and vines from shrubs. Both are directly attributable to using insufficiently trained and



Figure 38. Shrubby issues at Willowbrook. The upper photographs show boxwoods. On the left is a small specimen that is dying and should be removed. The specimen on the right requires appropriate pruning. The bottom left photograph is an example of a long dead shrub that has never been removed. At the bottom right is a holly that has been overtaken by trash vegetation and that has not been appropriately pruned.

uncaring individuals.

Allowing weedy plants to overtake shrubs detracts from their beauty and natural shape. At least one of the shrubs in Willowbrook looks as though it has grown whiskers.

Proper Pruning

In general, summer-flowering plants should be pruned before spring growth begins since these produce flowers on the current season's growth. Spring-flowering plants, such as forsythia, should be pruned after flowering since they produce flowers on the previous season's growth.

By-pass pruners are generally chosen for most pruning tasks in either 6 or 8-inch lengths. The pruners must be very sharp and it is good practice to sterilize the pruners by dipping them in a 10% bleach and water solution between plants.

We provide some general instructions below, but staff that are to undertake pruning should receive specific, and detailed, training.

Pruning Boxwood

Boxwood tends to develop a very dense growth habit. This thick foliage can be a major factor in disease development. In addition, the dense outer foliage, especially if the plant is sheared, will encourage outer growth, while everything on the plant's interior dies from lack of sunlight.

Annual thinning brings light and air into the interior of the plant and encourages the growth of new foliage within the canopy that can take over for branches damaged by ice or snow.

Boxwoods can be trimmed at any time of year, but for plant health it's best to avoid pruning in the late fall as this may expose new, tender growth to freezing weather. Often they are pruned in the early spring, after the threat of deep freezes is over.

Some boxwoods are in such poor condition they require renewal pruning. This technique usually involves cutting the plant back to within 6 to 12 inches of ground level. This is not the best approach for boxwoods and the plant is likely to decline and die. A better approach is avoid drastic removal and instead cut back stems over a period of three years. At the first pruning, remove one-third of the old, mature stems. The following year, take out one-half of the remaining old stems and head back long shoots growing from the previous pruning cuts. At the third pruning in yet another year, remove the remaining old wood and head back the long new shoots.

An overview of reviving and pruning boxwoods is available at <https://www.mastergardenersmecklenburg.org/pruning-boxwoods.html>. A similar document for holly is available at <https://www.finegardening.com/article/pruning-hollies>.

Turf

Turfgrass should be an important concern of cemeteries, although rarely is it given adequate attention. With an appropriate turfgrass, mowing frequency is reduced. This reduces labor costs, pollution, equipment expenditures, and perhaps most importantly for historic properties, damage to the stones.

Although the Association did not respond regarding our question about the type of grass present, our inspection reveals that much of the cemetery has a fairly good stand of centipede, although there are areas where weeds are in the process of taking over. These broad leaf "weeds" are undesirable species that cause the grounds to look unkempt and require frequent mowing to keep them in check. We identified areas of bare ground, largely the result of erosion or tree cover.

It is clear that the cemetery turf has received little attention beyond mowing. This has lead to an overall decline in appearance and an increase in maintenance costs.

Mowing

Because mowing is contracted out, we were unable to determine what type of equipment is being used. We suspect, however, that the bulk of it is being done by a large deck riding mower, perhaps 47 to 60-inch zero turn mower.

Stones in the cemetery clearly reveal the damage done by large equipment and less than perfect handling.

The Association admits that mowing is conducted no more than once a month and at times less. Mowing is essentially conducted when there is sufficient funds to pay for it. We understand that it requires about three days for the 4-acres to be mowed. Some trimming is done (based on the presence of discarded trimmer line), but this

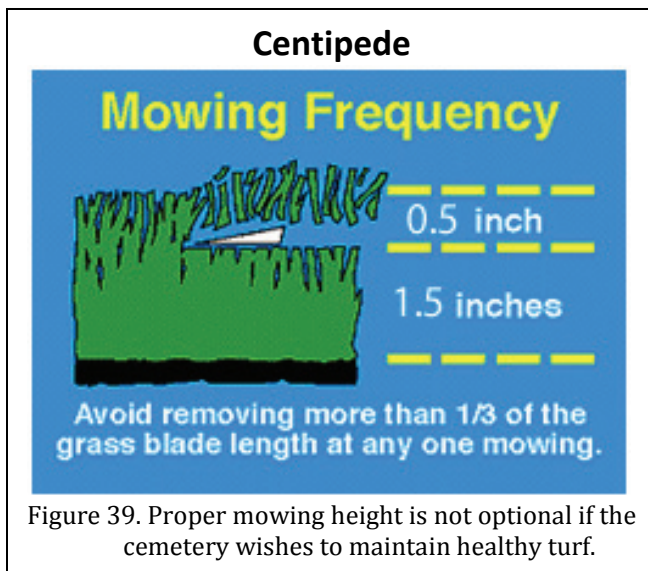


Figure 39. Proper mowing height is not optional if the cemetery wishes to maintain healthy turf.

doesn't seem to be routine. Generally, weedy turf must be mowed twice a month during the growing season in order to keep it looking decent, but this is clearly beyond the capabilities of so limited a budget.

This mowing schedule is unacceptable and fails to meet the most minimum cemetery standards.

In general, centipede should be mowed to a height of 1½-inches. Since the rule is that only one-third of a grass plant should be removed in one mowing, this means that if you intend to properly mow centipede turf at a height of 1½-inches, you can allow it to grow to a height of no more than about 2-inches. If you allow the grass to get taller than 3 inches you'll mow down into the stems that have grown tall. This will produce poor looking turf, stress the grass, and may cause disease.

In addition, if the grass is allowed to become too high, the removal of grass adjacent to monuments becomes more difficult with longer and thicker grass blades – and this in turn will lead to more damage to the stones.

There are some exceptions to these rules. For example, it is good practice to increase the mowing height for grass growing in the shade. This allows for more leaf area to intercept as much available light as possible. In addition, leaf blades in shaded areas will be longer and narrower and a lower cutting height will cause an excessive reduction in leaf length.

It is also appropriate to raise the height of the cut during stress periods, such as summer heat. Research reveals that grasses maintained at higher mowing heights have deeper root systems and improved drought tolerance. In addition, raising the mowing height of warm-season grasses as fall approaches will help the grass better over-winter.

Figure 40 reveals damage done to both marble and granite markers throughout the cemetery. This damage is the result of several factors, including (1) using mowers that are too large for navigation among the stone, (2) carelessness or inattention, (3) laziness by trying to minimize trimming time by getting as close to the stones as possible, and (4) working too fast.

Workers must be trained in the appropriate use of both mowers (and trimmers, to be discussed in a following section). Most manufacturers have training videos and there are a variety of training videos on-line. A good general



Figure 40. Mowing and damage of monuments at Willowbrook Cemetery. Upper left photograph shows a stone dislodged from the ground by a mower strike. Upper right photograph shows extensive edge damage resulting from the stone being scalped or mowed over by power equipment. The middle left photograph shows multiple edge impacts from equipment. Middle right photograph shows mowing of tall grass left on stones. This must be blown off. Lower left photograph shows a ledger almost totally covered by grass that has never been trimmed off. Lower right, coping that has been allowed to disappear under the grass.

article is provided at <http://igin.com/article-2001-how-to-train-your-mowing-crew.html>. They must also be appropriately supervised *on-the-ground*, not from the cab of a pickup truck. Translated to the situation of the Association, this means that a representative should be present during mowing, at least occasionally during the day, to indicate that they are concerned with the quality of work.

One step that can be taken is to require the installation of a closed-cell foam pad, attached to the sides and front edges of mowers. This bumper will help to minimize accidental damage and its damage will also provide evidence of impacts.

All grass clippings must be blown off monuments after mowing. Figure 40 clearly reveals this is not being done at present, leaving a mess to greet family members when they visit a loved one's grave. Cleaning the monuments afterwards demonstrates pride in work, attention to detail, and respect for the monuments and families.

This grass is also found on the turf and it disfigures the turf and will promote disease in the grass underneath. Its presence indicates that either mulching blades are not being used or that the grass was allowed to grow so high it was impossible for the blades to adequately mulch the cuttings.

Any mower used at the cemetery should be fitted – if they are not already – with mulching blades. This will to some degree reduce the piles of clippings. It will also help fertilize the turf.

We also found that in some areas the grass was poorly mowed, leaving broad areas unmowed or untrimmed. This is another inspection issue. The supervisor in charge should not allow this to happen and should take immediate corrective action.

Throughout the cemetery, we found grass blades that are being torn, not cut. This means that the contractor is not appropriately sharpening blades – a practice that should be done weekly, if not more often. Dull blades rip and pull the grass blades, leaving ragged tears that both weaken the plant and promote fungal growth and other grass diseases.

In addition to mowing, nylon trimmers are used around monuments, coping, fencing, and plantings. This is an acceptable practice, but it is critical that a very lightweight line be used – along with worker attention – to minimize damage to soft stone such as marble.

The trimmer line we recovered from the cemetery indicates that a 0.095-inch line is being used. We recommend a line diameter no greater than 0.065-inch. Thicker lines can cause extensive, and unnecessary, damage to stones. In addition, anything that a 0.065-inch line cannot remove, such as small trees and vines, should be cut with pruning shears.

Throughout the cemetery, we observed

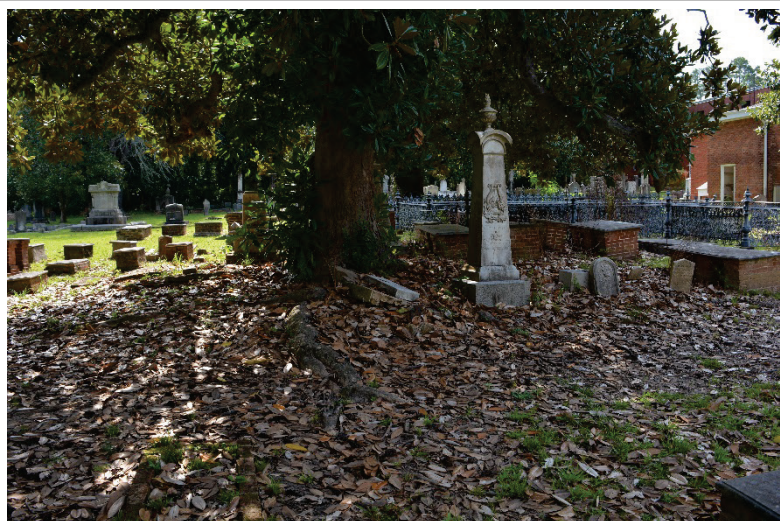


Figure 41. Area with dense shade and magnolia leaves that are not routinely collected and removed. This is an eyesore and presents a tripping hazard. Mulch should be installed – but leaves must still be periodically removed.

either bare spots or areas of heavily compacted soil. Some are the result of excessive shade (Figure 41) and they often represent dense mats of leaves that have not been raked and removed.

In those areas in shade under trees, we recommend mulching to a depth no greater than 4-inches. Nevertheless, leaves must be periodically raked and removed (especially magnolia leaves which otherwise will not readily decompose). In other areas, the problem is one of erosion. This issue has been previously discussed.

Finally, some areas simply require turf renovation as discussed below.

Fertilization and Weed Control

We understand that the cemetery is not using any pre- or post-emergent herbicides on the turfgrass. Good lawn management, which includes proper fertilization, mowing and watering, will produce a healthy dense turf that is difficult for weeds to invade. The Willowbrook turf, however, has received poor treatment and many areas exhibit dense weeds. Weed treatments coupled with better turf management practices can make a significant difference in the overall appearance of the grass.

Centipede is often referred to as "lazy man's grass" due to its infrequent mowing and fertilization requirements. This makes it an excellent choice for cemeteries with minimal maintenance capabilities. Nevertheless, it still requires some care and attention. For example, centipede prefers some acidity (pH less than 6.5). It is intolerant of compaction, low potassium, excessive thatch, drought, or heavy shade. The shade issue is best dealt with by mulching under dense shade trees and not attempting to grow grass. Otherwise, we have previously recommended soil modifications.

We anticipate it will and centipede can be fertilized in June, July, or August. Chelated iron can be sprayed to improve the turf color.

Treatment for weeds in the cemetery should occur from late February through March,

but can be repeated in September. Centipede is sensitive to certain herbicides such as 2,4-D and MSMA, so it is critical to follow label directions and use caution. Dow Gallery is one pre-emergent broadleaf herbicide that will not damage centipede when used as directed. Remember that pre-emergent herbicides prevent seeds from growing, but will no effect already existing weeds. These require the use of a post-emergent herbicide, typically applied on centipede in the winter. One example is the herbicide Segment.

Irrigation

Willowbrook does not have an irrigation system and, in general, we do not recommend them – they use very large quantities of water, their placement can interfere with markers and graves, and their operation can cause erosion to stones.

Nevertheless, the availability of water is critical for cemetery operations. It is necessary to water areas of renovation, planted trees, and reseeded graves.

In this urban setting, it should not be difficult to tap into existing town water supplies. We also suggest that this could be one of the town's in-kind contributions to the cemetery. We recommend the use of Woodward Tamper Resistant Freezeless Yard Hydrants, which would provide back flow prevention, frost proofing to a depth of 2-3 feet, and can be locked to prevent inappropriate use. Signage could be installed instructing visitors about who to contact for water use. Running a series of five bibbs down the center of the cemetery would provide water within 100 feet of most areas – and this distance would be easily covered by a hose.

Renovation

We recommend that the cemetery implement a renovation program in order to establish a good stand of a single grass type. This work can be accomplished section by section, gradually implementing the efforts throughout the cemetery.

A warm season grass, such as centipede, is probably a good choice, as long as its use is coupled with mulching under trees and shady areas where almost no grass will grow. This publication (<http://caes2.caes.uga.edu/commodities/turfgrasses/georgiaturf/Turfgras/Assets/L313%20Centipede.pdf>) provides information on renovation of existing turfgrass areas.

Bare areas can be replanted in late May using sod or, less desirable, plugs on 6-inch centers. Centipede can be seeded at ½ pound per 1,000 square feet if no preemergence herbicide has been applied within two months of planting.

Any renovation, however, will require water, so it may be more practical to first attempt to improve the centipede stand using fertilization and herbicides.

Core Aeration

There are many compacted areas of the cemetery that would be significantly improved with core aeration. As in the case of mowing, bigger is not necessarily better. Relatively small hand operated equipment will be needed to prevent damage to monuments. The equipment should use hollow tines or spoons so that soil cores 2 to 3 inches deep and ½ to ¾ inch in diameter will be removed. Aeration is best accomplished during periods of active plant growth and when the soil is moist enough to allow deep penetration.

We do not recommend this as a routine activity, but it will benefit the vegetation every 5 years.

Pest Control Practices

An issue of considerable concern is the presence of fire ants. One survey done in 1998 concluded that 33,000 people in the state of South Carolina sought medical attention as a result of fire ant stings. Of those 15% had severe localized allergic reactions and 2% had severe systemic reactions resulting in anaphylactic shock. Thus, fire ants are not simply an aesthetic nuisance, but they can pose a significant threat to the health of cemetery visitors.

Our work in the cemetery found fire ant mounds with alarming regularity. It is clear that no effort is being made to control the problem and this poses a significant liability to the Trustees.

An exceptional resource is the document, *Managing Imported Fire Ants in Urban Areas* (https://secure.caes.uga.edu/extension/publications/files/pdf/B%201191_5.PDF).

While individual mounds can be treated, this approach is best used in small areas. At Willowbrook Cemetery a far better approach is to treat once or twice a year, typically in April or May and again in September or October, by broadcasting a hydramethylnon bait such as Amdro at the rate of 1 to 2 pounds per acre. These applications will provide about 90% suppression rates, with maximum control about 2 to 4 weeks after application.

After 10-14 days the Amdro should be used as an individual mound treatment on any mounds that continue to be a problem or that remain in high traffic areas.

This treatment can be applied over the entire plotted cemetery at a cost of only \$100 per treatment or about \$25/acre.

Other Landscape Issues

Landscape Debris

During this assessment, we found that debris in the cemetery were either ignored or dumped at the north edge of the cemetery. Both approaches are unacceptable. Whoever does mowing must also be responsible for first collecting debris – including sticks, leaves, etc. – and removing them from the cemetery.

An alternative is to mulch the debris on-site, using a mulcher/shredder capable of handling debris up to 4-inches. The mulched material can be used for mulch on bare ground under trees.



Figure 42. Other landscape maintenance issues at Willowbrook Cemetery. Upper photographs show very large fire ant mounds in the cemetery. These pose a significant liability to the Association and require immediate and on-going treatment. The middle left photograph shows debris allowed to collect on a grave so long that seeds are beginning to sprout. Middle right shows landscape trash dumped at the cemetery edge, creating an eyesore. The lower left photograph shows a sunken grave that requires infill and seeding. The lower right photograph shows a graveled plot with dense lichen growing on it.

Graveled Plots

A few lot owners have chosen to use gravel, retained by coping, rather than allow the plots to be grassed. Often lot owners do this thinking that it will reduce maintenance. Unfortunately, as shown by Figure 42 and 43, this is never the case. In fact, these graveled lots almost always present a variety of long-term maintenance problems and the Association should discourage the practice and once ownership is established begin converting these plots to grass (after attempting to notify families).



Figure 43. Lot partially treated with herbicide creating a very unattractive appearance in the cemetery.

Too often the lots, once laid, receive no additional maintenance by the families. As a result, the gravel thins through time, ultraviolet light breaks down the underlying weed block, exposing it and allowing further deterioration. In addition, weeds will often begin to grow through the weed block and gravel. The typical solution to this, rather than laborious hand weeding, is to apply herbicides (see Figure 43). Since there is rarely an effort made to prevent future weeds, chemical control becomes a routine practice – causing long-term damage to

the memorials (and the environment). In addition, the weeds killed by the herbicide create a disheveled appearance that detracts from the overall cemetery aesthetics.

Sinking and Collapsing Graves

With no provisions requiring the use of vaults in the cemetery, the caregivers are faced with the issue of graves constantly sinking as the coffin and remains deteriorate. This creates not only an unsightly appearance, but it also makes it difficult to mow the grass without scalping and creates a trip hazard.

Some of these problems can be resolved by ensuring better compaction during the backfilling process, occasional infilling of depressions, and resodding the gravesite. These are simple, routine maintenance practices and all graves should be examined on a monthly basis to determine those that require attention. It is only when the problem is ignored that it escalates to a more serious situation.

Recommendations

- Landscape activities require more oversight than is currently provided. The service provider should be held accountable for performance with careful oversight of the Association. We have provided a simple checklist that may be of assistance.

- The Association should assure itself that the contractor has appropriate commercial liability, and workers compensation insurance, as well as complies with OSHA health and safety regulations and uses appropriate safety equipment.
- Soil tests reveal that the cemetery soils should receive, minimally, supplemental nitrogen. We recommend the use of organic blood meal since it has lower salt content than inorganic fertilizers and will less seriously affect the monuments.
- Additional soil tests should be conducted in 2019, after fertilization, to determine if additional treatments or fertilization is needed.
- Trees to be planted on Cemetery grounds must be carefully identified to be historically appropriate and to avoid significant issues such as surface roots, excessive litter, or weak structure. A list of potential plantings is provided.
- Every tree removed should be replaced by a new tree. It is also appropriate to plant replacement trees in anticipation of their need.
- All replacement trees or new plantings should be at least 1-inch caliper and meet the minimum requirements of the American Nursery and Landscape Association's American Standard for Nursery Stock (ANSI Z60.1-2004). All nursery stock should be carefully inspected prior to acceptance and planting.
- All new plantings should have water bags and rigid tree guards installed.
- Older, mature trees in the cemetery should have turf removed from under their drip lines and 3-inches of mulch installed (after all leaves and debris are removed).
- All trees must be inspected by an ISA Certified Arborist on a yearly basis and after any significant wind storm.
- All Cemetery trees must be pruned to remove dead wood at no greater than five year intervals. Many trees also require pruning for either thinning or cleaning. Pruning should preserve the natural character of the tree. All pruning must meet the ANSI A300 (Part 1) - 2017 standards.
- All pruning within the Cemetery grounds should be performed by an ISA Certified Arborist, preferably one who is also an ISA Certified Tree Worker/Climber Specialist. We have provided a list of ISA Certified Arborists for the Association to use.
- Stumps, wherever possible, should be cut to ground level. In most circumstances, stump grinding is to be avoided.
- Dead and dying trees should be removed *before* they cause damage. There are at least two trees requiring removal.
- Removed trees, including the one still in the Cemetery from the May 2018 storm, should be rapidly removed.
- Plantings, whether voluntary or intentional, that interfere with stones or fences must be evaluated on a case-by-case basis to determine appropriate remedies.
- When shrubs require replacement, they should be replaced in kind. All plantings should meet the minimum requirements of the American Nursery and Landscape Association's American Standard for Nursery Stock (ANSI Z60.1-2004). All nursery stock should be carefully inspected prior to acceptance and

planting.

- All shrubs must be pruned by hand. Shearing must not be allowed.
- There are several shrubs that should be removed (one is dead and the other is in very poor health).
- Those responsible for the shrubbery must be trained on appropriate pruning techniques for the common shrubs in the cemetery.
- The use of large deck mowers in Willowbrook Cemetery is problematical and only 21-inch walk behind mowers are recommended.
- Many stones in the cemetery are being needlessly damaged by the use of mowers that are too large, and staff that is poorly trained and inattentive. These problems are exacerbated by a lack of adequate supervision.
- All mowers must have closed cell foam bumpers installed. These must be replaced as needed. Operators with excessive wear on the bumpers should be given remedial training and instruction.
- No mowers are to be ridden or pushed over stones, especially ledgers, coping, or walls.
- Mowing must be conducted with sufficient frequency to maintain turf at a height of 1½-inches. This typically requires mowing at two-week intervals during the growing season, not every four weeks as is the current practice.
- Scalping of the grass must be prevented by more careful operation, especially if large mowers must be used.
- Sunken graves must be infilled on an

annual basis.

- The line weight used on the trimmers is too heavy. All line must be replaced by a line no greater than 0.065-inch.
- Grass clippings must be blown off all monuments after every mowing or trimming. The Association must conduct inspections to make certain this is being done.
- All mowers should have mulching blades installed. All blades must be sharpened weekly.
- The centipede turf exhibits extensive weed invasion. The cemetery should institute a weed control program, using pre- and post-emergent herbicides.
- The Association will find landscape maintenance greatly facilitated by the introduction of a few well-placed Woodward Tamper Resistant Freezeless Yard Hydrants in the center of the cemetery.
- Lawn renovation should be undertaken in areas of bare soil.
- Core aeration should be conducted in selected areas of the cemetery, focusing on compacted areas, and bare soil areas. This should be followed by reseeding.
- The Cemetery exhibits a severe infestation of fire ants. We recommend a two-step program consisting of broadcast Amdro bait, followed in about 10-14 days by mound treatments where necessary. This treatment should be conducted once or twice per year.
- No landscape debris should be thrown on the edge of the cemetery. Debris must be collected prior to every mowing. These debris should either be removed from the

cemetery or mulched.

- Leaf management in the Cemetery must be improved. The Association should determine if the contractor is using a recycler cutting system to chop grass clippings and leaves into fine mulch particles and return them to the ground.
- The Association should prohibit the creation of graveled plots and an effort should be made to convert currently graveled plots to grass.

Other Maintenance Issues

This section briefly explores other cemetery maintenance concerns exclusive of the landscape. We will briefly discuss signage issues, trash, and flowers. Also policies dealing with orphan stones, grave closure issues, and monument setting.

Signage

This issue of signage was briefly discussed in the “Administrative Issues” section in the context of current rules and recommended changes. Here these issues will be dealt with in more detail.

Currently, Willowbrook Cemetery does not have effective signage. There is a “No Perpetual Care” sign at the paved entrance and one side of the roadside historic marker for the Baptist Church briefly mentions famous politicians buried at the cemetery (but fails to provide any meaningful history).

From a cemetery preservation perspective signage is of four basic types: identification, regulatory, informational, and interpretative. They are generally recommended in this same priority.

Identification signage might include the name of the cemetery and might also include the cemetery’s date of founding and historic significance (i.e., listed on the National Register).

Regulatory signage specifies laws, regulations, or expected standards of behavior.

The last two types of signage are informational (for example, directional signs) and interpretative (information on historic people buried in the cemetery). While these are excellent and improve the visitor experience, none is critical

at this point since other issues must take priority. Additional signage may be added in the future.

The cemetery caregivers must strive to develop effective and well-designed signage. Signage should combine good and consistent design, and meet the needs of visitors.

Specifically, the signage should provide consistent information; should be universally accessible; viewable by several people at once; and be very durable and able to withstand abuse or constant touching. Signage minimally should be located near the two entrances.

Identification Signage

The current identification sign (at the Church) uses small print and is likely overlooked by most visitors (I almost missed it, assuming it only concerned the Church). It fails to alert visitors to the cemetery access or encourage them to visit.

We propose a new sign in classic black with rich gold lettering using a contemporary, but easily read typeface. The new sign should be located at the road edge at the parking area, pointing the way into the cemetery, beckoning visitors.

Regulatory Signage

There is no current regulatory signage and this is an issue that should be corrected as a very high priority. Figure 44 provides an example of the new regulatory signage.

Identical signs should be located inside the two entrances, where each should be posted parallel to the road for ease of viewing.

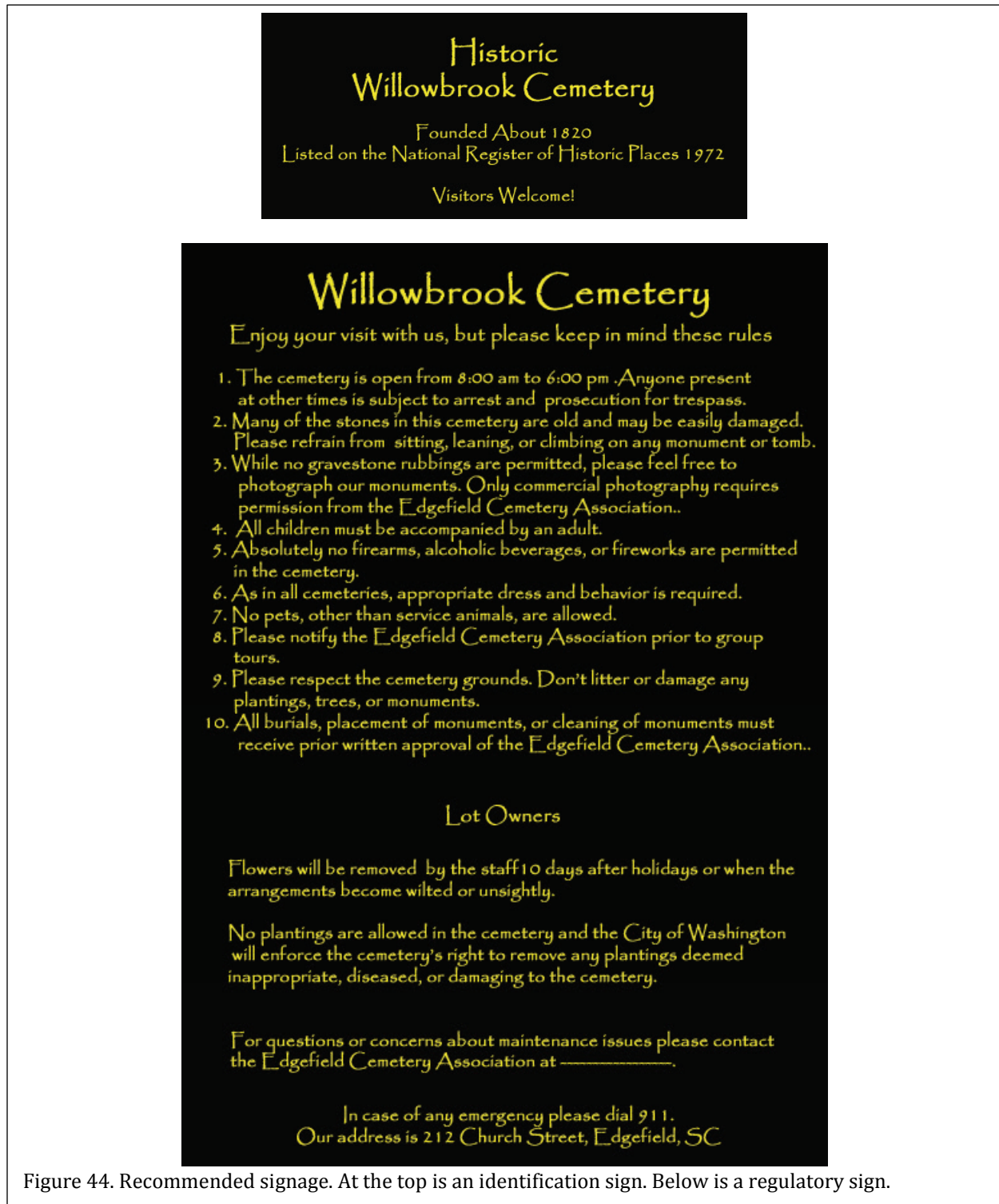


Figure 44. Recommended signage. At the top is an identification sign. Below is a regulatory sign.

Informational Signage

Only when more critical issues have been resolved do we recommend any informational signage. The first that may be considered is a cemetery map, which should be located at the pathway, but further in than the regulations.

Flowers and Other Grave Decorations

Willowbrook Cemetery, having no regulations at all, certainly has no flower regulations. While Figure 44 provides our simple recommendation, this issue deserves additional discussion. Barring regulations, graves in most cemeteries today, including Willowbrook, show a wide variety of plastic or silk floral arrangements.

At Willowbrook, most of these are long-past their prime and were found blown about the grounds. This detracts from the dignity and beauty of the cemetery. Plastic flowers, if accidentally mowed, also create significant debris that will not decompose.

We recommend that the Association adopt a flower policy that will minimize maintenance problems.

We believe that the cemetery contractor or Association volunteers should remove all flowers or arrangements 10 days after holidays *or* when the arrangements become unsightly. This will allow staff to remove faded flowers, Christmas decorations after the holidays, and so forth.

This is an extremely liberal policy, since some cemeteries limit the use of plastic flowers to only those months when fresh flowers are not routinely available. Fresh flowers are preferred since they mulch readily and do not cause litter if mowed over.

Grave decorations were not observed at Willowbrook as they are at many cemeteries.

Many cemeteries are beginning to struggle with the increasing tendency for the public to load graves with personal items. This problem is not unique to the United States, but has also been documented in Great Britain, where solar-powered lights, statues and windmills have appeared.

Some cemeteries have established rules based entirely on appearances. At times these are intentionally vague, for instance referring to “adornments considered offensive or otherwise inconsistent with the dignity of the cemetery.” In other cases, a detailed list of objectionable items



Figure 45. Flower issues at Willowbrook. At the top is a photograph of a bunch of artificial flowers blowing around the cemetery. At bottom is a faded arrangement, tipped over, but still on a grave. Both should be removed and discarded.

has been devised: “Toys, stuffed or otherwise manufactured or sculptured animals, statues or statuettes, personal items and/or other unsightly objects.”

Although aesthetics may reasonably be considered to suffer, most cemeteries attempt to control the proliferation on the grounds of the potential hazard to workers – a legitimate concern considering the use of mowers and trimmers on a routine basis.

Many cemeteries enact provisions that allow staff to remove such objects (“temporary objects”) when they become withered, unsightly, or an obstruction to maintenance. Other cemeteries prohibit the use of all objects made of concrete, glass, plastic, fiberglass, metal, ceramic, and wood, again with the justification of safety. And additional cemeteries prohibit objects that tend to increase maintenance efforts, such as bird feeders, statuary, and concrete pots.

While wishing to be sensitive to those who have lost loved ones, there must still be a middle ground that helps control the abundance of materials beginning to appear on graves in Willowbrook. Although not an issue today, it is a concern that should be periodically revisited.

Trash

Although trash is not as significant a problem at Willowbrook as it is in many more urban cemeteries, we did observe trash in a several locations. Of greater concern is that the trash appears to have been in the cemetery for a long time and had been mowed over or was directly under pruned shrubs and in neither case collected.

While it is certainly true that the cemetery is inadequately funded, there is no excuse for ignoring trash when it is immediately underfoot. This suggests a lack of supervision.

There are no trash containers at the



Figure 46. Example of trash in the cemetery.

cemetery and given the limited staff, we cannot in good conscience recommend them at this point. Instead, it is critical that caregivers make a greater effort made to pick up trash whenever it is observed.

Lost and Orphan Stones

Every cemetery has stones that are no longer associated with their graves. Good management requires that these stones be documented, collected and an effort made to return them to their proper locations. Long-term storage or, worse, simply ignoring them is inappropriate.

Stones should never be allowed to be removed from their original location without full documentation – where was the stone found, why is it being removed, where is it being stored, what should be done to reset the stone, what action is being taken to resolve the issue. Caregivers – including contractors (who may move stones to make mowing easier) must understand that once a stone is separated from the grave, the potential that the grave will become lost – regardless of the quality of the cemetery records – dramatically increases. Thus, every effort should be made to ensure that stones remain on their grave.

A form that can be used to document fragments or orphans is provided as Figure 47.



Chicora Foundation, Inc.
PO Box 8664
Columbia, SC 29202
803-787-6910

MONUMENT FRAGMENT AND REMOVAL RECORD

Cemetery:	Date:	Fragment ID#:
Origin, if known: Grave #:	Section #:	Lot #:
Type: <input type="checkbox"/> Headstone/primary monument	<input type="checkbox"/> Footstone	<input type="checkbox"/> Other: <input type="checkbox"/> Unknown
Stone: <input type="checkbox"/> marble	<input type="checkbox"/> slate	<input type="checkbox"/> granite <input type="checkbox"/> sandstone <input type="checkbox"/> concrete <input type="checkbox"/> other:
Dimensions (inches):	x	Thickness:
Visible Inscription:		
Visible Design:		
Location of Find:		
How Found:		
Storage Location & How Stored/Wrapped:		
Comments:		
Surveyor:		
Photograph and/or Sketch:		

Figure 47. Suggested monument fragment and removal record to track orphan stones.



Figure 48. Examples of orphan stones at Willowbrook Cemetery. The top photograph reveals all that is left of a displaced footstone – the stain on top of a ledger. The photograph below shows broken stones that are perhaps associated with the nearby cradle grave, but have been left scattered.

Grave Opening and Closing Issues

We are told that the Association is not involved in grave openings and closings. This is certainly one mechanism to try to ensure there is no liability. Nevertheless, as caregivers the Association should be concerned with the additional maintenance burden that improper openings and closings can create.

Evidence of this includes the large pile of soil left in the cemetery near the DeVore graves. Clearly subsoil from the excavation of graves, it has been discarded here, rather than being removed from the cemetery. This now becomes an issue that the Association must deal with in order to maintain the appearance of the cemetery.



Figure 49. Spoil soil left in the cemetery from a grave.

This pile also provides evidence that the Association is not involved in inspecting the condition of the property. Had it been discovered immediately after a burial, the funeral home and/or family could have been directed to remove it at their expense.

Now this spoil becomes yet another maintenance concern that the Association must find the funds to resolve.

Even if vaults are not required for the few additional burials, the Association should insist on maximum soil compaction to minimize slumping and should likewise insist on graves being resodded (not seeded).

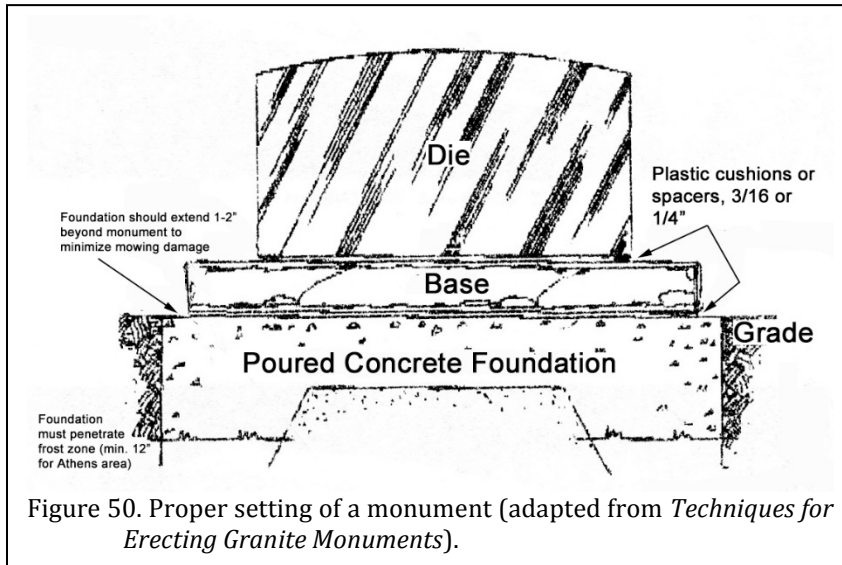
Setting Monuments

This is another area where the Association has thus far refused to take any responsibility. Yet when monuments are set improperly, they will tilt, sink, and topple – creating more maintenance needs in a cemetery for which there is almost no money. It is impossible for the Association to continue assuming the maintenance costs for its laissez faire policies.

The Elberton Granite Association in its publication, *Techniques for Erecting Granite Monuments*, has specific instructions for the setting of monuments and the Association should require all monuments in the cemetery to follow these very specific requirements to ensure long-term stability and reduce maintenance costs. These provisions will also help protect the family's costly investment.

The standards document should incorporate the following critical elements:

1. The foundation shall be centered in relationship to the grave or lot. The gravesite lot shall be physically probed, marked, and laid out in order to make this



determination.

2. Where a single marker or headstone is to be used to commemorate two or more gravesites, the foundation shall be centered between the gravesites to the extent possible.
3. All foundations shall be laid out so that the markers or headstones, including the visual presentation of inscriptions, will be in alignment with other foundations or markers or headstones in the same lot row.
4. The measurements of the foundation excavation shall be four-inches (4") wider than the width of the marker or headstone and four-inches (4") longer than the length of the marker or headstone in order that a foundation border of two-inches (2") will extend beyond the entire length and width of the marker or headstone after it has been installed.
5. Excavation for the foundations of markers or headstones that lie flat with the ground surface shall be dug at a depth of at least twelve-inches (12") to penetrate below the frost line. The burden of proof for

compliance with different standards shall be on the party responsible for each installation and must be approved by the Association in writing on a case-by-case basis.

6. Preparation of the foundation for any marker or headstone to be placed on any gravesite in Willowbrook Cemetery and the subsequent installation shall be scheduled by email, writing, or fax with the proper city representative.

7. Scheduling of foundation preparation and installation for any marker or headstone shall be based on weather and ground conditions, and other burial services in Willowbrook Cemetery.

8. The completion of a foundation shall be two-inches (2") above ground level and not detract from the appearance of gravesites in Willowbrook Cemetery. Removal of excavated dirt and clean up of the gravesite shall be performed promptly by the party preparing the foundation and installing the marker or headstone.
9. No marker may be set into wet concrete. All foundations must be cured at least two-weeks (14-days) prior to setting of monuments.
10. Markers will be required to have the section and site engraved on the headstone for easy site placement, and identification. The cost of the inscription will be borne by the proprietor - owner of the headstone.

Plot Curbs or Coping

With the large number of damaged monuments and the very limited funds, it is no surprise that the condition of plot curbs or coping

is also in disarray. Minimally, the Association should require that any moved or displaced by the gravedigger must be restored to “like new” condition.

Nevertheless, the infilling of depressed areas and resetting of curbs should be a routine maintenance operation. The use of a curb setting tool would be of assistance, but is not essential and the job can be done by hand. While this may be a low priority (given other needs), it must not be overlooked since it has a significant impact on the overall appearance of the cemetery.

Recommendations

- There is no regulatory signage currently and this must be rectified as quickly as possible. This signage should be located immediately within the road gate and at the pathway entrance.
- Identification signage is also needed, although the two could be combined.
- The Association should establish a policy that all flowers or arrangements will be removed 10 days after holidays or when the arrangements become unsightly.
- The Association should establish a policy that allows the removal of all “temporary objects” on graves or in plots when they become withered, unsightly, or an obstruction to maintenance.
- The mowing contractor must be responsible for collecting and disposing of trash prior to mowing.
- “Orphan” stones should be documented using a form and collected for short-term safekeeping until their appropriate location is identified through research. In so far as possible, stones should not be allowed to become disassociated with their graves as this effectively loses the grave location.
- Grave spoil should be removed from the cemetery.
- The Association should require the use of vaults for all future burials at Willowbrook or ensure maximum soil compaction..
- The specifications for setting of monuments must follow the recommendations of the leading industry organization. We have proposed new specifications that will ensure monuments are correctly set and the cemetery will not be burdened with future sinking and tilting problems.
- Plot curbs or coping throughout the cemetery are in deteriorating condition, posing a hazard to the public and detracting from the beauty of the cemetery. The repair of these curbs must be viewed as routine maintenance and must be integrated into the maintenance plan.

OTHER MAINTENANCE ISSUES

Conservation Issues

In the introduction to this plan we briefly discussed a variety of preservation issues, tackling the question of why it is important to preserve sites like Willowbrook Cemetery, as well as how preservation and restoration differ, and introducing the reader to the Secretary of Interior's Standards for Preservation. Readers may want to refer back to those discussions since they form a foundation for our discussion of the conservation needs at the Cemetery.

Standards for Conservation Work

The Association has chosen to make itself the steward of this Cemetery, holding what belonged to past generations in trust for future generations. As such, the Association bears a great responsibility for ensuring that no harm comes to the property during its watch.

One way to ensure the long-term preservation of the cemetery is to ensure that all work meets or exceeds the Secretary of the Interior's Standards for Preservation, discussed on pages 7-9 of this study.

Another critical requirement is that the Association ensure that any work performed in the cemetery is conducted by a trained conservator who subscribes to the Guidelines for Practice and Code of Ethics of the American Institute for Conservation of Historic and Artistic Works (AIC) (http://www.nps.gov/training/tel/Guides/HPS1022_AIC_Code_of_Ethics.pdf).

These standards cover such issues as:

- Respect the original fabric and retain as much as possible – don't replace it

needlessly.

- Ensure that the treatment chosen is suitable for the object, recognizing that at times no treatment is the best option.
- Choose the gentlest and least invasive methods possible.
- Is the treatment reversible? Is retreatment possible?
- Don't use a chemical without understanding its effect on the object and future treatments.
- Don't falsify the object by using designs or materials that imply the artifact is older than it is.
- Replication and repairs should be identified as modern so that future researchers are not misled.
- Use methods and materials that do not impede future investigation.
- Document all conservation activities and ensure that documentation is available.
- Use preventative methods whenever possible – be proactive, not reactive.

The AIC Code and Guidelines also require a professional conservator provide clients with a written, detailed treatment proposal prior to undertaking any repairs or treatment; once repairs or treatments are completed, the conservator must provide the client with a written, detailed treatment report that specifies precisely what was done and the materials used. The conservator must ensure the suitability of materials and methods – judging and evaluating the multitude of possible treatment options to arrive at the best recommendation for a particular object.

These Guidelines of Practice and Code of

Ethics place a much higher standard on AIC conservators than individuals or commercial monument companies that offer “restoration services.” This higher standard, however, helps ensure that Willowbrook Cemetery receives the very best possible care and that the treatments conducted are appropriate and safe.

Past Conservation Efforts

The only obvious efforts we observed during this assessment were very old repairs. None of these is appropriate by today’s standards, but we assume they were the best that could be achieved at the time.



Figure 51. Very old repair using ordinary Portland cement (OPC). This is no longer an acceptable treatment option as the material is too hard for the marble.

In addition, the Association reports that some monuments have been cleaned using “detergent.” This practice should cease and we provide additional information on appropriate cleaning in a following section.

General Types of Stone Damage

Although a stone-by-stone assessment was not included in this assessment, it is possible

to provide some general observations concerning the types of problems faced by Willowbrook Cemetery. These discussions provide general observations that will help place the recommendations in a broader context.

Sinking and Tilted Monuments

A significant problem in Willowbrook Cemetery is the sinking and tilting of monuments. This problem is easily mistaken for vandalism or even the result of water movement. However, we believe the most likely culprit is the inadequacy of monument foundations in most (although not all) cases.

As stones sink, they become more likely to topple. As they topple not only is the appearance of the Cemetery dramatically altered, but also the monuments can present a significant liability to the caregivers. In addition, as monuments topple they are very likely to hit coping, walls, or other stones, causing damage to themselves or the objects they hit. This dramatically increases repair costs.

In general, these stones are being displaced because there was no adequate foundation and as the graves collapsed, the monuments began to sink or tilt. The problem could have been prevented by requiring carefully laid foundations.

In fact, meetings of the Association of American Cemetery Superintendents going back to the early 20th century included numerous discussions of why deep foundations were essential. One member expressed the sentiment,

The principal thing in all foundations is not width or length, but depth. One of the greatest curses of the Memorial

industry today is the cut-price man who sells Memorials, and Markers especially, and then puts under a foundation from 6" to 12" deep. Memorials placed on such a foundation will never stand. Therefore, our suggestion would be have all monument foundations at least 5'0" deep, and no less; length and width is merely a matter of opinion (Merkle 1917:473).

Other authorities demanded foundations be placed to the depth of the grave itself, thereby ensuring that monuments would not tip, tilt, or sink into collapsing graves.

Today, it rare to find a foundation even 6 to 12-inches in depth and many lack any foundation whatsoever. A 5-foot foundation is probably not necessary unless a very heavy and tall monument is erected; the granite industry has made recommendations, previously discussed, that are affordable and that will provide good long-term stability.

The solution involves the resetting of these monuments, prior to their further collapse.

Simple Resetting

A large number of stones in the cemetery require resetting. Many of these are flush-to-ground lawn markers or tablets that have sunk and are now either tilted or being covered with soil and grass. Resetting is generally simple and a suitable task for volunteers.

The stone should be excavated, being careful to avoid shovel damage. There are some monuments that have been set in concrete and the removal of this material may require a conservator to ensure that the stone itself isn't damaged. Otherwise, the hole can be deepened and filled with decomposed granite as bedding. The lawn marker should be reset with the top about 1 inch above the ground level – tall enough to prevent

being covered by soil and grass, but not so tall that it would be damaged by mowing. Tablets should be set with about 25 to 33% of the stone below grade. Additional pea gravel should be packed in around the stone as it is being leveled. The upper inch of backfill should be soil to allow for revegetation.

It is critical that Portland cement never be used to reset stones since it removes their ability to shift if they are accidentally hit by mowing or other landscape activities (using Portland cement and allowing it to cure prior to resetting is acceptable).

Resetting Die on Base Stones

The cemetery has a number of granite die on base stones that were originally set using setting compound. This is a commercial product typically consisting of calcium carbonate, talc, and occasionally calcium silicate in linseed oil or a similar material. It is designed to be applied under a granite monument to help seal it to the base and prevent water intrusion. Because it contains oil it may leave a halo on marble and should only be used for setting granite monuments. Setting compound is not an adhesive and will eventually dry out. It also does not prevent a monument from being tipped over, so care must be taken when the monument being set is top heavy, very tall, or is in a setting where vandalism is likely. In such cases it is good practice to set the monument not only with setting compound, but also with one or more fiberglass pins.

Marble stones were typically set with a mortar rather than setting compound, although this too is not an adhesive and will often fail.

In order to reset a die on base that is loose or shifted, it is first necessary to remove the die and set it aside. The base then must be checked to determine if it is both stable and level. In many cases, it will be necessary to remove the base, and establish a new foundation with decomposed granite.

All old mortar or setting compound must be removed from the base and the die. This can



Figure 52. Examples of sinking and tilted monuments that require resetting, before additional (and more expensive) damage is done. Upper row photographs shows pedestal tombs with poor foundations sinking into graves. The middle left photograph is a simple die on base tilting into the grave. Middle right photograph shows a marble ledger beginning to bow as its supports collapse into the grave. Lower photographs show two cradle graves with collapsed sideboards and the headstone tilting.



Figure 53. Fallen monuments. Upper row photographs show two die on base monuments that have fallen and require resetting with pins. The middle left photograph shows stones toppled by a tree. Middle right photograph is another toppled die on base. The lower two photographs show the large granite cross at the DeVore grave, likely toppled by vandalism or tree (based on the presence of still intact pins). The cross is now broken into three pieces, making the repair even more expensive.



Figure 54. Extremely dangerous monument. This monument, which is clearly not pinned, has shifted on its base (note arrow) and poses a significant threat to the public.

usually be accomplished using plastic spatulas or a small chisel. Care must be taken not to disfigure the stone during this cleaning process.

If pins are to be installed holes must be drilled and cleaned in both the die and base (sometimes monuments are already drilled for pins, which the monument company failed to install). Either fiberglass or stainless steel pins should be inserted that are slightly shorter and smaller than the holes. While they may be set using epoxy or lime mortar, it is often acceptable to leave them loose.

The purpose of these pins is to help secure the base and die, making it more difficult to accidentally (or intentionally) tip a monument over.

If setting compound is being used on granite markers, it should be rolled between your hands to create "strings" 1-2 feet in length and about ½ inch in diameter. These strings should be set about ½ inch inside the edge of where the die will make contact with the base. Poly cushion spaces should be used at the four corners to prevent the setting compound from being completely expelled when the die is reset.

If the monument is marble, then a lime based mortar (never Portland cement mortar) should be used rather than setting compound.

The stone is then reset and appropriately centered – there are special monument setting devices to assist in this. Setting compound that is pushed out can be cut off using a plastic spatula for later reuse. Excess mortar can be manually removed and then the monument can be cleaned off using a barely damp sponge and fresh water. If there are any gaps, additional setting compound or mortar will need to be used to fill these gaps.

Cradle Graves

Cradle graves, also called bedstead monuments, are combinations of headstones and footstones connected by side rails, giving the appearance of a bed. Historically these were often

planted in flowers or groundcover.

Resetting cradle graves is more difficult and time consuming than other monument types, but involves essentially the same techniques. The individual parts were typically connected by ferrous or brass pins. These fail as the grave shaft collapses and individual components begin sinking or tilting.

The first step is removal of the individual components and infilling the grave with decomposed granite in order to establish a good foundation for rebuilding the monument. If all of the parts are intact, they are simply reset as described in the above sections.

If the side rails are broken, which is unfortunately common once they are exposed, then the monument requires conservation treatment.

Loose Monuments

There are a number of loose monuments. These are typically die on base markers where the monument company failed to insert a pin to stabilize the two parts (the die and the base). These monuments remain upright through gravity and consequently pose a significant threat to the public, other monuments, and themselves.

For such monuments, we recommend drilling and pinning as described earlier to improve stability and reduce the cemetery's liability.

Large Monuments

There are, unfortunately, some large monuments that are severely tilted or fallen. Depending on their size, these will require the use of a tripod, small equipment, or even a crane to facilitate resetting. These should be reset by a conservator trained in rigging and using the equipment needed for large, heavy monuments.

Broken Stones

There are examples of broken stones.

Leaving these stones laying on the ground or leaning against other stones subjects them to additional damage, increasing the eventual cost of appropriate repair. Stones on the ground are walked on, may have mowers run over them, and if they are marble, are subject to greater acid rain damage. It is always critical to erect fallen stones and this simple resetting is an activity that volunteers could undertake.

This cemetery is quite fortunate that there have been relatively few past repair efforts using inappropriate repair techniques or materials. It is always far easier to conduct an appropriate conservation treatment than to “undo” inappropriate actions, such as the use of “simple epoxy” repairs – where stone fragments are joined using a continuous bead of epoxy. Experience indicates that for a long-lasting repair, particularly in structural applications, use of pins is necessary. Moreover, most adhesives are far stronger than the stone itself, meaning that failure of the repair is likely to cause additional damage to the stone.

Appropriate conservation treatment requires a blind pin repair. This drilling and pinning is a process that involves carefully aligning the fragments, drilling the stones, and setting fiberglass, or occasionally threaded 316 stainless steel rod, using a structural epoxy in the drill holes.

Diameters and lengths of pins vary with the individual application, depending on the nature of the break, the thickness of the stone, its condition, and its expected post-repair treatment. The choice of epoxy depends on the required strength, among other factors.

Since there is also usually some loss of fabric along the break, this treatment will also involve infilling areas of loss with a compatible mortar. This consists of a natural cementitious composite stone material resembling the original as closely as possible in texture, color, porosity, and strength. This type of repair may be used to fill gaps or losses in marble.

Under no circumstances should latex or

acrylic modified materials be used in composite stone repair. These additives may help the workability of the product, but they have the potential to cause long-term problems. Such products are not appropriately matched in terms of strength or vapor permeability.

Materials that are more suitable include Jahn (distributed by Cathedral Stone) or the lime-based mortars of U.S. Heritage. These closely resemble the natural strength of the original stone, contain no synthetic polymers, exhibit good adhesion, and can be color matched if necessary.

Drilling stones is a complex treatment that should only be conducted by a trained conservator. Infill is similarly complex and the Jahn products require certification in their use through Cathedral Stone.

In at least one case, there is a broken ledger on a box tomb. Prior to repair of the ledger, the box tomb requires brick work to ensure a firm, level base. In another case, two box tombs are severely deteriorating with multiple bricks being displaced. In these cases, the ledgers must be removed and the box tombs rebuilt, before the ledgers are reinstalled.

Ferrous Pins

Many die on base stones were observed that had been set using ferrous pins to join the die and base. These stones should be given a high treatment priority since, left untreated, the corrosion of the ferrous pin will cause significant spalling, cracking, and breakage of the stones – a process known as “iron jacking.” The corrosion products of these ferrous pins have a greater volume than the original pin and as the corrosion products expand, they crack the stone. Some of these stones already exhibit corrosion staining and cracking.

It is necessary to use diamond core drills to remove the corroded ferrous pins and replace them with either fiberglass or, rarely, stainless steel. Afterwards it is necessary to fill the voids with a natural cementitious composite stone material



Figure 55. Broken stones. Upper left tab in socket is broken into three pieces and the tab was previously repaired using inappropriate OPC. Middle right shows a ledger cracked in two. The lower photograph reveals extensive damage. Not only is the obelisk toppled and broken, but its impact also broke the ledger and toppled an adjacent monument.



Figure 56. Example of iron jacking in the cemetery.

such as that previously described for infill repairs.

In some cases, the iron pins have already caused the stone to spall or break. Treatment is similar, except that the replacement pins must often be longer and inserted into stone that is still capable of bearing the weight of the monument. Such repairs also necessitate major reproduction of lost stone and therefore are more time consuming and expensive.

Cleaning

Many of the stones exhibit relatively dense deposits of lichen (a symbiotic association typically between fungus and green algae) or algae alone. While sometimes viewed as only an aesthetic issue, there are many stones in Willowbrook Cemetery where the biologicals have become so thick that the carving on the stone is today illegible.

These biologicals may damage stone in a variety of additional ways. As lichen and

other plants grow, they can exert pressure on the mineral grains, weakening the intergranular structure. Some organisms produce acid compounds that dissolve the calcium carbonate. Some can even etch granite. Many of the lichen and algae allow water to migrate into cracks and crevices of the stone, leading to freeze-thaw damage.

We have a simple handout that the Association could begin offering to lot holders that provide good instructions on proper cleaning.

Table 4 lists problems with a variety of “common” stone cleaning processes widely used by commercial firms and the public. This information is important to the Association and should be made available to any families that may inquire about cleaning their specific monuments.

A suitable biocide for cleaning stones is



Figure 57. Example of dense lichen growth obscuring the inscription.

Table 4.
Comparison of different cleaning techniques

Cleaning Technique	Potential Harm to Stone	Health/Safety Issues
Sand Blasting	Erodes stone; highly abrasive; will destroy detail and lettering over time.	Exposure to marble dust is a source of the fatal lung disease silicosis.
Pressure Washers	High pressure abrades stone. Inexperienced users can exacerbate this. Pressures should not exceed 90 psi.	None, unless chemicals are added or high temperature water is used.
Acid Cleaning	Creates an unnatural surface on the stone; deposits iron compounds that will stain the stone; deposits soluble salts that damage the stone.	Acids are highly corrosive, requiring personal protective equipment under mandatory OSHA laws; may kill grass and surrounding vegetation.
Sodium Hypochlorite & Calcium Hypochlorite (household and swimming pool bleach)	Will form soluble salts, which will reappear as whitish efflorescence; can cause yellowing; some salts are acidic.	Respiratory irritant; can cause eye injury; strong oxidizer; can decompose to hazardous gasses.
Hydrogen Peroxide	Often causes distinctive reddish discolorations; will etch polished marble and limestone.	Severe skin and eye irritant.
Ammonium Hydroxide	Repeated use may lead to discoloration through precipitation of hydroxides.	Respiratory, skin, and eye irritant.
D/2 Architectural Antimicrobial	No known adverse effects, has been in use for nearly 15 years.	No special precautions required for use, handling, or storage.

D/2 Biological Solution (<http://d2bio.com/>) available from a variety of conservation suppliers. Stones should always be prewetted prior to application of D/2 and after dwelling for a few minutes followed by gentle scrubbing, should be flushed from the stone.

Recommendations

- The Association must require that all work performed in the cemetery on monuments, fences, or walls be conducted or overseen by a trained conservator who subscribes to the Guidelines for Practice and Code of Ethics of the American Institute for Conservation of Historic and Artistic Works (AIC).

- The Association must affirm its responsibility to care for all areas of the cemetery.

- High priority treatments include the stones that require resetting for the safety of the stone and the public.

- Monuments evidencing iron jacking are nearly as critical since, left untreated, these stones will rapidly join the ranks of those that are broken.

- Volunteers should undertake the cleaning of the worst soiled stones in the cemetery using D/2 Biological Solution. This will dramatically improve overall appearance and provide a very visible improvement to the cemetery landscape.

- The repair of broken stones is the least critical conservation concern. These stones are unlikely to deteriorate further in the course of a 5-year plan.

Priorities

Willowbrook Cemetery suffers many of the same problems plaguing most small town cemeteries. Everyone loves “heritage,” as long as it costs them little or nothing. This includes the public, churches, and government entities. As long as cemeteries can offer a free (or below market cost) burial location, they are supported, albeit minimally. However, once the space for burials is gone, the public too often turns its back and moves on to other locations and other causes. In America today, the average period of memorialization is about seven years, clear evidence that the country is moving away from ancestor worship.

Two things are clear. The first is that cemeteries (and their caregivers) must focus on developing a constituency – a group of people who will vocally demand that the graves of the departed be cared for. The second is that historic organizations, in developing that constituency, must offer the public something more than “old dead white men” as the cause. Perhaps a third thing is also clear – if someone comes forward to care for an issue, more often than not, others disappear into the background, content that they are not being held responsible.

There should be no surprise that we find – on a consistent basis – so many problems at local burial grounds.

Politicians often complain that money is thrown at problems in an effort to solve them. There has been a drumbeat of “do more with less.” Curiously, any thinking person realizes that this philosophy fails to address root problems. No one works for free; there are only 8 hours in a day; and the volunteer community often lacks the skills, strength, and resources to do what is critical. As a result, problems compound, or cascade, and eventually a crisis point is reached.

Willowbrook Cemetery has reached that crisis point. The Association began riding on a wave of “civic pride” that has since, based on limited financial contributions, largely dissipated (although we are certain this would be vociferously disputed). Local churches have chosen to minimize their connect with the cemetery, even though the Register of Deeds lists one of these churches as the owner. Local families have moved away, died off, or simply forgotten their ancestors. The wealth of Edgefield cotton is gone. The power of local politicians has waned.

Nevertheless, trees require intensive care; lawns require better maintenance and in some areas, reseeding; fences are at the point of being lost; erosion is getting worse; and some monuments are a clear threat to the public. Simply put, the root problem is a lack of adequate finances.

In my meetings with the Association, I was blunt in my assessment – nothing I can suggest will happen without money. It is essential that additional, significant, revenue sources be identified. Currently begging and scraping for \$500 is not, in its essence, preserving the cemetery. It may be delaying the inevitable, but this is not preservation.

We estimate that the four-acre Willowbrook Cemetery requires, at a very minimum, \$25,000 a year – and this would still be considered miserly and cover little more than the most basic maintenance issues. In addition, that cost can be expected to escalate 4-5% yearly and allow little, if any, money to be set aside for emergencies.

This is why our very first recommendation is for the Association to resolve ownership and press for a broad-based support from the entire

community, including the Town of Edgefield, perhaps even Edgefield County, all of the community churches with families buried in the cemetery, and all of the historic preservation organizations in the community.

While not one of these may have funds – by themselves – to care for the cemetery, banded together they all can certainly come up with an annual appropriation of \$25,000, perhaps more (remember, this is the bare minimum, not an ideal). The Association should pointedly and loudly emphasize that they alone cannot (and should not) continue to cover maintenance and it is time for the other members of society to do their share.

Recommended Priorities

Our assessment questionnaire asked what the Cemetery Committee thought were the three most significant preservation concerns. They responded: to repair monuments and fences, and identify the most significant concerns.

There are many monuments that require attention, but they are not the highest priority. All stones wear and erode. There is little that can be done about this natural tendency. What can be done is to ensure that only safe and appropriate cleaning is conducted; that all repairs are appropriate and conducted by a trained individual; and that efforts are taken to ensure that other aspects of care do not contribute to the deterioration of the stones.

We believe the larger issue involving the inadequate maintenance program at the cemetery must be resolved.

We recognize that it can be difficult to maintain focus and with this in mind, Table 5 lists the recommendations offered throughout this assessment, classifying them as a *first priority*, a *second priority*, or a *third priority*.

First priorities are those we recommend undertaking during the coming fiscal or calendar year (2019) or even sooner. Some of these are organizational or administrative rules, policies, or

procedures that can be quickly resolved and will help ensure future actions are guided by sound considerations. Many of these require little or no funding, but do demand a philosophical change in how the cemetery is viewed. They must be enacted as a foundation upon which other changes are constructed. We strongly believe that most cemetery projects fail through inadequate or inappropriate planning – thus, we recommend in the strongest possible terms that the Association engage in the necessary planning to help ensure success.

Second priorities are those that should be budgeted for over the next 2 to 3 years (2020-2021). They represent urgent issues that, if ignored, will result in both significant and noticeable deterioration of the cemetery as a component of the National Register property.

Third priorities are those that may be postponed for several additional years (2022-2023), or alternatively, may require 3 to 5 years to see fruition. Some actions are also less significant undertakings that require other stages to be in place in order to make them feasible or likely to be successful. Although they are given this lower priority they should not be dismissed as trivial or unimportant.

Within these three categories, the individual items are not ranked, as all are essentially equal in importance.

It is likely that some of these recommendations will not be achievable in the five years allotted for this plan. That does not mean that the issues will no longer be of consequence or will not still be critical for the survival of the cemetery. What it does mean is that after 5 years we recommend sitting down and re-evaluating what has been achieved, what still needs to be done, and determine how to move forward.

Table 5.
Prioritization of Recommendations

Priority	Action
1st Priority	<p>1.01 A meeting of the Edgefield Cemetery Association (and related organizations) should be devoted to a careful review of the Secretary of Interior Standards. The caregivers should focus on a fuller understanding of how daily operations affect the long-term preservation of the cemetery, making necessary adjustments to current policies and procedures. At that meeting, this assessment could be further explored.</p> <p>1.02 The Association should investigate ownership to resolve questions regarding control and maintenance obligations (this may involve increasing the priority of additional historical research).</p> <p>1.03 At a minimum, there should be a memorandum of understanding prepared in which all of the players – the Town of Edgefield, the Association, the Baptist Church, and other organizations parcel out fair responsibilities, obligations, and commitments.</p> <p>1.04 The Association should consider joining forces – formally or informally – with the other Edgefield organizations with preservation as their central theme.</p> <p>1.05 The Association should begin contacting plot owners in an effort to enlist them in funding lot-specific improvements and repairs.</p> <p>1.06 The Association should adopt a more meaningful method of grave adoption, ensuring that the funds solicited can actually accomplish something specific and meaningful.</p> <p>1.07 The Association should review options to combat vandalism and determine which could be implemented to help harden the cemetery against vandalism.</p> <p>1.08 All of the homes bordering the cemetery should be contacted and asked to assist in reporting any unusual activities on the property.</p> <p>1.09 All plot gates and loose fence sections must have stainless steel cabling used to attach the gate to the hinge post to reduce the potential for theft.</p> <p>1.10 Plot fences must be placed on a schedule for painting and other repair.</p> <p>1.11 Caregivers should not allow the introduction of additional benches, urns, or vases in the cemetery. Caregivers should also be careful to prevent other introductions that are out of character with the historic cemetery such as grave decorations. The introduction of new memorials must be very carefully monitored and limited. New monuments should be allowed only when the historic monument is no longer legible. In such cases, the original monument must remain and a new flush marker with the precise language of the original marker erected as a flush-to-ground lawn marker.</p> <p>1.12 The Cemetery exhibits a severe infestation of fire ants. We recommend a two-step program consisting of broadcast Amdro bait, followed in about 10-14 days by mound treatments where necessary. This treatment should be conducted once or twice per year.</p> <p>1.13 Landscape activities require more oversight than is currently provided. The service provider should be held accountable for performance with careful oversight of the Association. We have provided a simple checklist that may be of assistance.</p>

PRIORITIES

Table 5, cont.
Prioritization of Recommendations, continued

Priority	Action
1st Priority, continued	<p>1.14 The Association should assure itself that the contractor has appropriate commercial liability, and workers compensation insurance, as well as complies with OSHA health and safety regulations and uses appropriate safety equipment.</p> <p>1.15 The use of large deck mowers in Willowbrook Cemetery is problematical and only 21-inch walk behind mowers are recommended.</p> <p>1.16 Many stones in the cemetery are being needlessly damaged by the use of mowers that are too large, and staff that is poorly trained and inattentive. These problems are exacerbated by a lack of adequate supervision.</p> <p>1.17 No mowers are to be ridden or pushed over stones, especially ledgers, coping, or walls.</p> <p>1.18 Mowing must be conducted with sufficient frequency to maintain turf at a height of 1½-inches. This typically requires mowing at two-week intervals during the growing season, not every four weeks as is the current practice.</p> <p>1.19 The line weight used on the trimmers is too heavy. All line must be replaced by a line no greater than 0.065-inch.</p> <p>1.20 Grass clippings must be blown off all monuments after every mowing or trimming. The Association must conduct inspections to make certain this is being done.</p> <p>1.21 All mowers should have mulching blades installed. All blades must be sharpened weekly.</p> <p>1.22 Leaf management in the Cemetery must be improved. The Association should determine if the contractor is using a recycler cutting system to chop grass clippings into fine mulch particles and return them to the ground.</p> <p>1.23 Removed trees, including the one still in the Cemetery from the May 2018 storm, should be rapidly removed.</p> <p>1.24 Older, mature trees in the cemetery should have turf removed from under their drip lines and 3-inches of mulch installed (after all leaves and debris are removed).</p> <p>1.25 All trees must be inspected by an ISA Certified Arborist on a yearly basis and after any significant wind storm.</p> <p>1.26 All Cemetery trees must be pruned to remove dead wood at no greater than five year intervals. Many trees also require pruning for either thinning or cleaning. Pruning should preserve the natural character of the tree. All pruning must meet the ANSI A300 (Part 1) – 2017 standards.</p> <p>1.27 All pruning within the Cemetery grounds should be performed by an ISA Certified Arborist, preferably one who is also an ISA Certified Tree Worker/Climber Specialist. We have provide a list of ISA Certified Arborists for the Association to use.</p> <p>1.28 Dead and dying trees should be removed before they cause damage. There are at least two trees requiring removal.</p>

Table 5, cont.
Prioritization of Recommendations, continued

Priority	Action
1st Priority, continued	<p>1.29 There is no regulatory signage currently and this must be rectified as quickly as possible. This signage should be located immediately within the road gate and at the pathway entrance.</p> <p>1.30 Identification signage is also needed, although the two could be combined.</p> <p>1.31 The mowing contractor must be responsible for collecting and disposing of trash prior to mowing.</p> <p>1.32 The specifications for setting of monuments must follow the recommendations of the leading industry organization. We have proposed new specifications that will ensure monuments are correctly set and the cemetery will not be burdened with future sinking and tilting problems.</p> <p>1.33 The Association must require that all work performed in the cemetery on monuments, fences, or walls be conducted or overseen by a trained conservator who subscribes to the Guidelines for Practice and Code of Ethics of the American Institute for Conservation of Historic and Artistic Works (AIC).</p> <p>1.34 High priority treatments include the stones that require resetting for the safety of the stone and the public.</p> <p>1.35 Monuments evidencing iron jacking are nearly as critical since, left untreated, these stones will rapidly join the ranks of those that are broken.</p>
2nd Priority	<p>2.01 There is insufficient historic understanding of the cemetery. Historic research should focus on the development of the cemetery with an end result suitable for various public education needs. Particular research topics should include town records, as well as newspaper accounts, as well as a careful assessment of Edgefield County deeds. Another significant topic is the evaluation of burial claims far earlier than is typically accepted. All of these are excellent volunteer opportunities and are critical before any future public education components are developed.</p> <p>2.02 The existing laws should be significantly expanded to ensure the preservation of the cemetery.</p> <p>2.03 The Association should develop a Willowbrook website. It should be maximized as a sales tool, including information on donor opportunities with options to make the donations using PayPal or credit cards. The website should include a listing and photographs of plots and monuments. The website should provide a meaningful history of the cemetery. The website should provide news and photographs of tours, work in the cemetery, etc.</p> <p>2.04 The one road require the preventative maintenance of killing and manually removing the grass and using a sealer to prolong the life of the asphalt.</p> <p>2.05 The road edges should be trimmed or edged on a yearly basis.</p> <p>2.06 The existing sidewalk is being poorly maintained, with grassing growing through cracks and along the edges. This reduces its benefit to wheelchairs and even poses a tripping hazard for ambulatory individuals. It should be trimmed and edged on a monthly basis.</p>

PRIORITIES

Table 5, cont.
Prioritization of Recommendations, continued

Priority	Action
2nd Priority, continued	<p>2.07 The pre-existing fence along the east property line should be cleared and replaced as needed.</p> <p>2.08 Plot fences must be removed from the soil.</p> <p>2.09 Soil tests reveal that the cemetery soils should receive, minimally, supplemental nitrogen. We recommend the use of organic blood meal since it has lower salt content than inorganic fertilizers and will less seriously affect the monuments.</p> <p>2.10 Additional soil tests should be conducted in 2019, after fertilization, to determine if additional treatments or fertilization is needed.</p> <p>2.11 All mowers must have closed cell foam bumpers installed. These must be replaced as needed. Operators with excessive wear on the bumpers should be given remedial training and instruction.</p> <p>2.12 Scalping of the grass must be prevented by more careful operation, especially if large mowers must be used.</p> <p>2.13 No landscape debris should be thrown on the edge of the cemetery. Debris must be collected prior to every mowing. These debris should either be removed from the cemetery or mulched.</p> <p>2.14 Trees to be planted on Cemetery grounds must be carefully identified to be historically appropriate and to avoid significant issues such as surface roots, excessive litter, or weak structure. A list of potential plantings is provided.</p> <p>2.15 Every tree removed should be replaced by a new tree. It is also appropriate to plant replacement trees in anticipation of their need.</p> <p>2.16 All replacement trees or new plantings should be at least 1-inch caliper and meet the minimum requirements of the American Nursery and Landscape Association's American Standard for Nursery Stock (ANSI Z60.1-2004). All nursery stock should be carefully inspected prior to acceptance and planting.</p> <p>2.17 All new plantings should have water bags and rigid tree guards installed.</p> <p>2.18 The Association should establish a policy that all flowers or arrangements will be removed 10 days after holidays or when the arrangements become unsightly.</p> <p>2.19 The Association should establish a policy that allows the removal of all "temporary objects" on graves or in plots when they become withered, unsightly, or an obstruction to maintenance.</p> <p>2.20 Grave spoil should be removed from the cemetery.</p> <p>2.21 The Association should require the use of vaults for all future burials at Willowbrook, or minimally ensure maximum soil compaction.</p>

Table 5, cont.
Prioritization of Recommendations, continued

Priority	Action
2nd Priority, Continued	2.22 Plot curbs or coping throughout the cemetery are in deteriorating condition, posing a hazard to the public and detracting from the beauty of the cemetery. The repair of these curbs must be viewed as routine maintenance and must be integrated into the maintenance plan.
3rd Priority	<p>3. 01 The cemetery should prepare a disaster plan to cover events such as flooding, tornadoes, windstorms, and similar events.</p> <p>3.02 Once the cemetery is in better condition, the Association should begin quarterly activities, eventually taking on more frequent programing.</p> <p>3.03 There is a significant erosion issue along Church Street. Sections of what appear to be historic brick walls are failing and require appropriate repair. Elsewhere steep cuts have little vegetation and will eventually erode graves. A retaining wall or hydromulching is essential.</p> <p>3.04 All future modifications at Willowbrook should be evaluated for their impact on universal access. Universal access should be a goal whenever possible.</p> <p>3.05 With the descendants' permission, the vault should be opened and investigated by a forensic archaeologist. At that time, the condition of the vault should be assessed. Afterwards the vault door should be treated for long-term preservation and sealed. The resulting information would serve as excellent educational material for tours and exhibits.</p> <p>3.06 The cemetery should begin using a form to identify and record evidence of vandalism.</p> <p>3.07 The Association will find landscape maintenance greatly facilitated by the introduction of a few well-placed Woodward Tamper Resistant Freezeless Yard Hydrants in the center of the cemetery.</p> <p>3.08 The Association should prohibit the creation of graveled plots and an effort should be made to convert currently graveled plots to grass.</p> <p>3.09 Lawn renovation should be undertaken in areas of bare soil. The centipede turf exhibits extensive weed invasion. The cemetery should institute a weed control program, using pre- and post-emergent herbicides.</p> <p>3.10 Sunken graves must be infilled on an annual basis.</p> <p>3.11 Core aeration should be conducted in selected areas of the cemetery, focusing on compacted areas, and bare soil areas. This should be following by reseeding.</p> <p>3.12 When shrubs require replacement, they should be replaced in kind. All plantings should meet the minimum requirements of the American Nursery and Landscape Association's American Standard for Nursery Stock (ANSI Z60.1-2004). All nursery stock should be carefully inspected prior to acceptance and planting.</p> <p>3.13 All shrubs must be pruned by hand. Shearing must not be allowed.</p> <p>3.14 There are several shrubs that should be removed (one is dead and the other is in very poor health).</p>

PRIORITIES

Table 5, cont.
Prioritization of Recommendations, continued

Priority	Action
3rd Priority, continued	3.15 Those responsible for the shrubbery must be trained on appropriate pruning techniques for the common shrubs in the cemetery.
	3.16 Plantings, whether voluntary or intentional, that interfere with stones or fences must be evaluated on a case-by-case basis to determine appropriate remedies.
	3.17 Stumps, wherever possible, should be cut to ground level. In most circumstances, stump grinding is to be avoided.
	3.18 "Orphan" stones should be documented using a form and collected for short-term safekeeping until their appropriate location is identified through research. In so far as possible, stones should not be allowed to become disassociated with their graves as this effectively loses the grave location.
	3.19 Volunteers should undertake the cleaning of the worst soiled stones in the cemetery using D/2 Biological Solution. This will dramatically improve overall appearance and provide a very visible improvement to the cemetery landscape.
	3.20 The repair of broken stones is the least critical conservation concern. These stones are unlikely to deteriorate further in the course of a 5-year plan.

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**Identification of Grave Locations
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Condition Assessments

Treatment of Stone and Ironwork



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